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CASE REPORT

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NANDA-I diagnoses, NIC interventions and NOC outcomes in the child with congenital heart disease

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Abstract

This case report presents the nursing care of a 22 month old infant diagnosed with complete atrioventricular septal defect (CAVSD) and coexisting Down syndrome, guided by the Roper Logan Tierney Activities of Daily Living Model and the NANDA I, NIC, and NOC classification systems. Structured assessments covering 12 fundamental activities of daily living enabled identification of individualized NANDA I nursing diagnoses, with corresponding NIC interventions and NOC outcomes. The care plan addressed complex issues such as respiratory dysfunction, nutritional deficiencies, impaired physical mobility, and family coping challenges. Close collaboration within a multidisciplinary team and active family participation contributed to favorable clinical progress, while the use of standardized nursing languages ensured precise documentation and personalized care strategies. The experience underscores how integrating nursing models and classification systems into clinical practice can enhance care quality, promote patient safety, and strengthen interdisciplinary cooperation in managing children with congenital heart defects and Down syndrome.

Keywords: Heart diseases, down's syndrome, nursing care, nursing diagnosis

Introduction

Congenital heart disease (CHD) is defined by the World Health Organization (WHO) as birth defects caused by malformations that occur in the heart structure from birth and affect the normal development and functioning of the heart [1]. Congenital heart disease (CHD) is the most common congenital malformation, accounting for 28% of major anomalies and 6-10% of neonatal deaths [2]. In recent years, medical and surgical advances have significantly reduced mortality rates in infants with congenital heart disease [3,4]. The prevalence of CHD has been reported to be 9.41 per 1000 births worldwide [5]. In Asia, the prevalence was reported to be 5-10 per 1000 live births [2]. The prevalence of congenital heart disease in Turkey has been reported to be between 1-1.2% [6]. Although the etiology of most CHD is not known exactly, it is thought to occur due to multifactorial causes. It is hypothesized that the interaction of genetic predisposition and environmental factors may cause CHD [7].

CHD can be classified into two groups as cyanotic and acyanotic according to their physiopathology [8,9] (Table 1,2).

Medical treatment of CHD is necessary to help correct and repair defects in the heart. Diuretics, digoxin, vasodilators and antiarrhythmic drugs are recommended [10]. The advancement of transcatheter techniques is replacing traditional surgical interventions because they are safer and more comfortable for the patient. The development of special devices and equipment with technological equipment enables more interventional procedures to be performed in the treatment of most diseases and interventional catheterization is preferred in treatment [11]. Corrective operations are mostly performed to reduce morbidity and mortality in congenital heart disease. Cardiac surgical

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procedures are classified according to whether they are open or closed and whether they are corrective or palliative [12].

Table 1. Acyanotic Congenital Heart Diseases

Left-Right Shunt	Obstructive Lesions
Ventricular septal defect	Aortic stenosis
Atrial septal defect	Aortic coarctation
Patent ductusarteriosus	Pulmonary stenosis

Table 2. Cyanotic Congenital Heart Diseases

Reduced Pulmonary Blood Flow	Increased Pulmonary Blood Flow
Tetralogy of Fallot	Transposition of the great arteries
Pulmonary atresia	Truncus arteriosus
Tricuspid atresia	Single ventricle
Transposition of the great artery with pulmonary stenosis and ventricular septum defect	Total pulmonary venous return anomaly

Pediatric surgery addresses surgical problems that children may face prenatally, postnatally and throughout adolescence [13]. Globally, four out of five children experience hospitalization before the age of five, and more than two million children undergo surgery each year [14]. After a successful surgical procedure in congenital heart diseases, the postoperative care process planned correctly by an experienced, trained and dedicated team positively affects survival. In complex cardiac surgeries, complications should be evaluated and managed with a multidisciplinary approach [15].

In this case report, the data of a patient with a diagnosis of Complete Atrioventricular Septal Defect (CAVSD) were collected in accordance with the "Activities of Daily Living Model" of Roper, Logan, and Tierney, and the North American Nursing Diagnosis Association -International (NANDA-I) Taxonomy II Nursing Diagnoses, Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC) (Table 3).

Various classification systems have been developed to create a standardized language and framework in nursing practice. These systems help nurses to better assess the condition of patients, create appropriate care plans and measure outcomes. The first classification system was created by the North American Nursing Diagnoses Association (NANDA). NANDA-I published Taxonomy I in 1987 and Taxonomy II in 2003. In NANDA-I, nursing diagnoses are defined as "the clinical decision made by the nurse about the individual, family or community's responses to current or potential health problems/life processes". NANDA-I Taxonomy II classification consists of 13 domains, 47 classes and 244 nursing diagnoses. Although the creation of NANDA-I diagnoses is an ongoing process, NANDA-I continues to meet periodically to organize the approved list of diagnoses [16]. The NIC was developed by a research team at the University of Iowa in 1987, based on the need to standardize nursing practices for the solution of existing and potential problems of patients/individuals. The NIC was first introduced in 1992 and entered the international indexes in 1994. The NIC has been updated and published to cover 7 domains (physical, complex, behavioral, safety, family, health system and community), 30 classes, 565 nursing interventions and approximately 13,000 activities and can be used in all care areas (acute, chronic, intensive care, home care and long-term care etc.) and in all developmental periods [17]. The NOC was started to be developed by the University of Iowa in 1991 in order to evaluate the pre-care status of individuals and post-care changes for nurses and consists of 7 domains and 31 classes. The nurse can reach the target point in NOC in different durations in the short, medium and long term. Therefore, the frequency of NOC assessment may vary according to the health status of the individual and the nature of the problem [18]. In the literature on nursing classification systems, it is reported that a link should be established between NANDA-I, NIC and NOC (diagnosis-intervention-outcome) [19]. On the basis of a methodological approach, nursing care plans created using classification systems can objectively and comprehensively monitor and evaluate whether the individual's data are adequately collected, the accuracy of nursing diagnoses, and the effectiveness of selected practices.

Roper-Logan-Tierney Nursing Model

- Activities of Daily Living
- Life Span
- Dependence Independence String
- Factors Affecting Activities of Daily Living
- Individuality in Life/ Individualized Nursing Care.

Case History

A case report of nursing care of a baby with CAVSD will be explained. It was aimed to explain the North American Nursing Diagnosis Association- NANDA diagnoses and NIC and NOC classification system [23]. Before collecting the data for the case report, the necessary permissions were obtained from Baby A's family and an informed consent form was completed. By collecting the data of the case, NANDA nursing diagnoses were made and the expected patient outcomes, interventions and results for each nursing diagnosis were reported (Table 4).

Baby's Date of Birth: 27.01.2023
Name: Baby A
Age: 22 months
Gender: Girl
Mode of Birth: Caesarean section
Diagnosis: Complete Atrioventricular Septal Defect
Associated Syndrome: Down Syndrome
Gestational Age: 39 weeks
Birth Weight: 3.110 g
Birth Height: 49 cm
Blood Type: 0 Rh(+)

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Table 3. Descriptive characteristics of the case according to the Activities of Daily Living Model of Roper, Logan, Tierney

Activities of Daily Living	Descriptive Characteristics of the Case
1.Provision and Maintenance of a Safe Environment	Appropriate hygiene and safety precautions were taken during home-type mechanical ventilator applications in the case. The cooperation of the mother and the healthcare team ensured the safety of the baby. The patient is followed in the bed due to decreased muscle strength and impaired balance. The sides of the bed were raised and the brakes were locked. The patient's room is a single room and the room lighting and temperature are appropriate. When pressure points were checked, no evidence of pressure sores was observed. Personal Cleaning and Hygiene
2.Communication	Voice communication is limited due to tracheostomy Non-verbal communication was established with smiles, gestures and tactile stimuli. There is regular information sharing between the family and nurses.
3.Respiration	Complete Atrioventricular Septal Defect (AVSD) and Down syndrome are associated. Long-term mechanical ventilator requirement (SIMV, CPAP, etc. modes). Respiration was provided by tracheostomy and respiratory findings were intensively monitored.
4.Nutrition	Intermittent nutritional intolerance developed due to surgical procedures and prolonged intensive care unit hospitalization. Portion planning and appropriate enteral feeding strategies were applied with dietitian consultation. Growth and development parameters were monitored.
5.Excretion	Regular urine output and defecation status were monitored. During periods of nutritional intolerance, water/electrolyte balance was evaluated and necessary arrangements were made. Diaper change was provided in accordance with sterile care principles.
6.Personal Cleaning and Hygiene	The external appearance of the patient is clean and good.
7.Body Temperature Control	Fever was monitored frequently in the postoperative period and intensive care unit. Body temperature was recorded as 36.6 °C before discharge. When necessary, active/passive heating methods were used to maintain the heat balance.
8.Movement	The 22-month-old baby's motor development is delayed for his age; he has head control and can sit with support, but he has not developed the ability to walk without support. In the first postoperative period, limited movement is possible due to intensive care conditions Tracheostomy and mechanical ventilator support limited mobilization. Passive exercises were performed with the help of the mother and physiotherapists.
9.Work and Entertainment	As a 22-month-old baby, play and activities that support motor development are at the forefront instead of “work”. Play was encouraged with toys and sensory stimuli appropriate for the month. With the cooperation of the nurse and the family, games were implemented to adapt to the treatment.
10.Expression of Sexuality	In a 22-month-old child, sexuality is not expressed through impulses or identity but through body awareness and safe physical contact. Experiences such as being touched, hugged, and cared for help develop feelings of love and security. This process forms the foundation for a healthy body image and self-concept in later years.
11.Sleep	Sleep patterns are frequently affected in children with tracheostomy and mechanical ventilator support. In order to increase the comfort of the baby, efforts have been made to minimize sleep interruptions by paying attention to the frequency of sound, light and intervention
12.Death	In the current situation, the goal is “survival and recovery” and the mortality risk is increased in the operative period and in the sepsis stage. The risk of death has been reduced with careful care and necessary surgical interventions during the treatment process.

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Table 4. Nursing Care Plan

Nursing Diagnosis	Etiology	Symptoms	Targeted NOC Outcomes	NIC Nursing Interventions
Nursing Diagnosis 1: Respiratory Disorder (Domain 3: Respiration, Class 4: Gas Exchange)	Congenital heart disease (Complete Atrioventricular Septal Defect), previous cardiac surgeries, tracheostomy, mechanical ventilator dependency	Increased respiratory rate, low oxygen saturation, need for inotropic support.	-Stabilization of respiratory status -Oxygen saturation reaches 90% and above -Respiratory rate within the age-appropriate range	-Frequent monitoring of respiratory parameters (respiratory rate, oxygen saturation, auxiliary muscle use, etc.) -Adjusting mechanical ventilator settings (in collaboration with the physician and intensive care team) -Applying respiratory physiotherapy (postural drainage, percussion, vibration) -Regular tracheostomy care with aseptic technique
Nursing Diagnosis 2: Nutrition Less than Body Requirements (Domain 2: Nutrition, Class 1: Malnutrition)	-Mechanical ventilator dependence -Decreased gastrointestinal motility after surgery -Hypotonicity due to Down syndrome	Vomiting after feeding, distension, inadequate weight gain	-Meeting daily nutritional needs -Reduction of nutritional intolerance -Age-appropriate weight gain	-Preparing and implementing enteral nutrition plan -(Planning of parameters such as volume, feeding time, speed, calorie content with the doctor and dietician) -Burping and proper positioning after feeding -(Prevention of aspiration and reflux, especially with right lateral, head-up position) -Creating an individualized nutrition program with dietitian consultation -Regular monitoring for signs of nutritional intolerance (vomiting, distension, amount of residue) -Applying the principle of small and frequent feedings when necessary -Educating the family about nutrition and positioning
Nursing Diagnosis 3: Ineffective Family Coping (Domain 9: Coping/ Stress Tolerance, Class 2: Coping Processes)	-Prolonged hospitalization -Chronic health problems of the baby (CHD, Down syndrome, tracheostomy) -Psychosocial stress caused by intensive care and postoperative period	-Anxiety, tension -A sense of helplessness -Fatigue and burnout symptoms -Care role conflict in family members -Difficulty in decision-making processes	-Supporting family members -Decreased anxiety levels -Increasing involvement in the baby's care	-Supporting the emotional and psycho-social needs of the family -Open communication with the family, encouraging them to express their feelings -Strengthening the roles of family members and facilitating their adaptation to the crisis -Encouraging family involvement in the daily care of the baby (feeding, cleaning, positioning, etc.) -Referring to a social worker or psychological counselor when necessary
Nursing Diagnosis 4: Impaired Physical Mobility (Domain 4: Activity/Rest Class 2: Activity/ Exercise)	-Presence of tracheostomy -Dependence on mechanical ventilator -Prolonged bed rest -Hypotonicity due to Down syndrome -Previous cardiac surgeries	-Limited mobility -Limitation of in- or out-of-bed mobilization -Decreased muscle strength -Low muscle tone -Difficulty in movement due to assistive device (tracheostomy, ventilator)	-Increasing physical mobility -Supporting muscle strength and tone -Ensuring age-appropriate mobilization of the baby -Prevention of complications (decubitus, contracture, etc.)	-Implement passive and active exercises appropriate for the age and condition of the baby -Proper positioning to prevent pressure sores and deformities -Encourage in-bed movements in accordance with infant care -Informing the family about the mobilization of the baby and ensuring their participation in the care of the baby -Providing skin care and proper positioning to prevent the development of decubitus ulcers
Nursing Diagnosis 5: Impaired Swallowing (Domain 2: Nutrition Class 1: Swallowing	-Presence of tracheostomy -Long-term mechanical ventilator use -Hypotonia due to Down syndrome -Decreased overall muscle tone after surgery -Risk of aspiration during feding	-Cough during or after feeding -Bruising after feeding, increased secretion -Inadequate oral intake -Fatigue during feeding -Inadequate weight gain	-Ensuring safe and adequate oral/enteral nutrition of the baby -Reduced symptoms of aspiration -Ensuring adequate weight gain -Family members should be able to apply safety precautions during feding	-Monitoring swallowing function and practicing safe swallowing techniquesPerforming appropriate positioning to prevent pressure sores and deformities -Planning and implementing appropriate enteral nutrition if there is nutritional intolerance -Proper positioning during feeding (head 30-45 degrees up) -To inform the family about swallowing disorder and safe feeding methods -Teaching appropriate diet and portion planning to the family in collaboration with the dietitian

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Nursing Diagnosis 6: Risk of Impairment of Oral Mucous Membrane (Area 11: Safety / Protection, Class 2: Physical Injury)	-Inability to feed orally for more than 24 hours -Decreased fluid consumption -Breathing with non-humidified air due to mechanical ventilator dependence -Hypotonicity and inadequate salivary secretion due to Down syndrome -Inadequate oral hygiene -Prolonged postoperative hospitalization	-Dryness and cracks in the lips -Pale and dry palate -Weakness in the integrity of the oral mucosa -Susceptibility to mucosal infections	-Protecting the integrity of the oral mucous membrane -Reduced dry mouth -Moist and soft lips -No mucosal injury and infection	-Regular oral care (application of saline, mouth moisturizer, lip balm) -Monitoring daily fluid intake and output, re-evaluating with the nutrition team if fluid is limited -Recognizing the signs of oral infection (thrush, canker sores, ulcers) early and taking necessary precautions -Educating the family about oral care, moisturizing and preventing cracked lips -Encourage intraoral moisturizing and feeding whenever oral intake is possible
Nursing Diagnosis 7: Risk of Impairment of Oral Mucous Membrane (Area 11: Safety / Protection, Class 2: Physical Injury)	-Inability to feed orally for more than 24 hours -Decreased fluid consumption -Breathing with non-humidified air due to mechanical ventilator dependence -Hypotonicity and inadequate salivary secretion due to Down syndrome -Inadequate oral hygiene -Prolonged postoperative hospitalization	-Dryness and cracks in the lips -Pale and dry palate -Weakness in the integrity of the oral mucosa -Susceptibility to mucosal infections	-Protecting the integrity of the oral mucous membrane -Reduced dry mouth -Moist and soft lips -No mucosal injury and infection	-Regular oral care (application of saline, mouth moisturizer, lip balm) -Monitoring daily fluid intake and output, re-evaluating with the nutrition team if fluid is limited -Recognizing the signs of oral infection (thrush, canker sores, ulcers) early and taking necessary precautions -Educating the family about oral care, moisturizing and preventing cracked lips -Encourage intraoral moisturizing and feeding whenever oral intake is possible
Nursing Diagnosis 8: Infection Risk (Domain: 11. Safety/Protection Class: 1. Infection)	-Invasive interventions (Tracheostomy, mechanical ventilator use, central venous catheter) -Prolonged hospitalization -Immunosuppression (possible immunodeficiency due to Down syndrome) -Surgical interventions (AVSD repair, PDA ligation) -Malnutrition and malnutrition -History of sepsis	-Prolonged hospitalization in intensive care -Need for respiratory support (Mechanical ventilator) -Tracheostomy -History of previous sepsis -Food intolerance and weight loss	-Will not show signs of infection -Body temperature will be within normal range -Infection markers such as leukocyte count, CRP, Procalcitonin etc. will be within normal limits -The patient will be protected from infections in a safe environment	-To comply with hand hygiene, aseptic and sterile techniques -Regular assessment of invasive intervention sites and dressing renewal -Monitoring signs of infection (fever, leukocytosis, CRP, procalcitonin) -To perform tracheostomy care and airway aspiration with sterile technique -Regular cleaning of the patient's environment -Applying isolation measures -Ensuring respiratory system hygiene (applying respiratory physiotherapy) -Providing nutritional support (in cooperation with a dietitian) -Applying immune system supportive care (ensuring regular and adequate nutrition, giving vitamin support) -Monitoring fever, respiratory rate, blood pressure and pulse rate -Monitor oxygen saturation -Regular assessment for signs of infection
Nursing Diagnosis 9: Aspiration Risk (Domain 11. Safety and Protection Class 2. Physical Injury)	-Invasive interventions (tracheostomy, mechanical ventilator use, central venous catheter) -Prolonged hospitalization -Immunosuppression (possible immunodeficiency due to Down syndrome) -Surgical interventions (AVSD repair, PDA ligation) -Malnutrition and malnutrition -History of sepsis	-Prolonged hospitalization in intensive care -Need for respiratory support (Mechanical ventilator) -Tracheostomy -History of previous sepsis -Nutritional intolerance and weight loss	-The individual's nutrition will be provided without the development of aspiration -The individual will swallow effectively without choking-clogging, the secretion will be clear and odorless	-Maintaining airway patency of the individual, -Evaluating the individual's signs of aspiration such as dyspnea, coughing, cyanosis, audible breathing, increased respiratory rate, increased salivation, hyperthermia, -In nasogastric feeding, elevating the patient's head at least 30-45° *v* Keeping the aspiration set ready, -Checking the location of the NGT and the residual volume content before starting to feed the individual, not starting feeding if the residual volume is more than 250 mL, observing the inside of the mouth

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Family History

Mother: 30 years old. Housewife. The mother had her first pregnancy and delivered by cesarean section at 39th week. No chronic disease. She was willing to participate in care and treatment during the intensive care period, often accompanied by the baby.

Father: 29 years old. Laborer. No chronic disease. He visited the hospital frequently and was supportive of his wife.

Maternal Pregnancy History: There is no history of drug use, alcohol and cigarette use, disease during pregnancy, radiation. Regular check-ups were performed.

Health History: Congenital heart defects (e.g., atrioventricular canal defect, ventricular septal defect, patent ductus arteriosus) are reported to be present in approximately 40–60% of Down syndrome cases [24]. In a review by Santoro et al. (2021), it was stated that the prevalence of congenital heart disease reported in individuals with Down syndrome varies between 20% and 57.9% depending on study methodologies, but is stable around 40–55% in many studies. According to data from the American College of Cardiology, congenital heart defects are observed in approximately half of live-born newborns with Down syndrome, with atrioventricular septal defect being the most common anomaly among these cases [25].

During pregnancy follow-up, they stated that they knew that they would have heart disease and were informed about the risk of Down syndrome, but they refused blood and amniocentesis tests. After a planned cesarean delivery, she was incubated and hospitalized for 35 days. At the age of 3 months and 20 days, she was hospitalized for the first time and the surgical procedure of Complete Repair of Atrioventricular Septal Defect (AVSD) - PDA Ligation was performed on 17.05.2023. In the postoperative period, he could not be extubated, he had sepsis, his pulmonary parameters worsened and his second surgery, AVSD Complete Repair, was performed on 15.06.2023 with high inotropic support and 60% Spo2 in terms of valve regurgitation. Tracheostomy opening was performed on 10.07.2023 for the patient who could not be extubated. Intermittent follow-up in SIMV, SIMV/PRCV, CPAP mode continued. The process of adaptation to the home mechanical ventilator was started, intermittent conversion between mechanical ventilator / home mechanical ventilator / easybreathe was performed. On 02.11.2023, he was adapted to the home mechanical ventilator. During the intensive care period, he intermittently experienced nutritional intolerance, dietician consultation and portion planning were performed. On 08.12.2023, he was transferred from the pediatric cardiovascular surgery intensive care unit to the inpatient ward. On 14.12.2023, Heart Peak Beat: 111/min, Blood Pressure: 85/45 mm/Hg, Temperature: 36.6 °C, Respiratory Rate: 46/min, 67 cm, 5.500 kg and was discharged with healing.

Discussion

The diagnosis of CAVSD, the clinical course with Down syndrome and the complex surgical and postoperative processes of the 22-month-old baby girl discussed in the case report reveal the impact of current medical and surgical practices on neonatal care. The medical and surgical advances reported by Jakubowski (2024) have significantly reduced mortality in such cases. However, complications such as prolonged intensive care and mechanical ventilator support emphasize the importance of care plans that require a multidisciplinary approach in the postoperative period [15].

The case was handled with the application of NANDA-I, NIC and NOC classification systems, which constitute a standard language and framework in nursing care planning. The assessment based on Roper, Logan and Tierney's Activities of Daily Living Model is exemplary in terms of making accurate nursing diagnoses, determining expected outcomes and ensuring systematic follow-up of practices. This comprehensive approach enables multidimensional assessment of the clinical status of the individual and strengthens the collaboration between the family, patient and healthcare team. For example, the nursing diagnoses of “Ineffective Respiratory Pattern” and “Nutrition Less than Body Requirements” determined for the patient show that effective interventions can be made to stabilize respiratory and nutritional functions with specific interventions [24].

In addition, the tracheostomy application seen in the case reveals the importance of strict infection control and aseptic care practices in terms of preventing complications such as long-term mechanical ventilator use and invasive procedures, risk of infection. This situation shows that nursing care plans should be re-evaluated dynamically and patient-oriented. In the current literature, multidisciplinary approaches and individualized care plans have been reported to have positive effects on patient safety and treatment success [10,11].

The case presented in this study highlights innovative approaches to the diagnosis of CAVSD and the care of the clinical course of comorbid Down syndrome. Compared to similar case series and model applications reported in the literature the integration of the Roper-Logan-Tierney model into patient- and family-focused care strategies in the present case demonstrated the importance of multidisciplinary collaboration and individualized approach [10,24]. The findings of the case reveal that the patient's postoperative period was rapidly adapted thanks to the unique care strategies applied and that this situation is reproducible in similar cases. In addition, the positive results obtained in the application of the model show that it can guide nursing practitioners to use a standardized language in clinical decisions as well as to improve the quality of care.

Limitations

A significant limitation of this case report is its focus on a single patient. Clinical observations from a single case limit

generalizability. Furthermore, long-term follow-up was not conducted to track measurable nursing outcomes during the case period. Therefore, systematic application of the model to different patient groups and subsequent studies to evaluate comparative results are recommended.

Conclusion

This case report examines the nursing care of a 22-month-old female infant diagnosed with Down syndrome and CAVSD in a holistic manner, within the framework of the Roper-Logan -Tierney Nursing Model and the NANDA-I, NIC, and NOC classifications. This approach provides nurses with structured and scientifically based guidance in developing individualized care plans [16, 17].

In this case, activities of daily living (respiration, circulation, mobility, feeding, elimination, sleep, safety, emotional expression, etc.), assessed according to the Roper-Logan-Tierney model, enabled accurate identification of the patient's nursing diagnoses, and targeted interventions were developed in collaboration with the multidisciplinary team. This practice contributed to both improving the quality of care and managing the length of hospital stay [6, 23].

A family-centered approach and patient safety-focused interventions were prioritized in the development of the care plan. Studies by Dalir et al. (2020) and Uludağ et al. (2020) demonstrate that families of children with congenital heart disease experience high stress and caregiver burden. Therefore, psychosocial nursing interventions to strengthen parental support were also included in the plan. Furthermore, interventions to prevent complications in the early postoperative period are important for reducing readmission rates, as highlighted in the literature [12].

The presented case similarly demonstrates the effectiveness of nursing models used in patients with Down syndrome and CAVSD. The application of the model-based approach parallels case reports in the literature in aspects such as patient-centered planning, activity organization appropriate for cognitive development, and the development of communication strategies [2,8,15]. In particular, the systematic application of the Roper-Logan-Tierney model contributed to continuity of care by facilitating monitoring of improvements in activities of daily living.

This case report clearly demonstrates the advantages of using the Roper-Logan-Tierney model in patients with CAVSD. The model's patient- and family-centered approach, multidisciplinary collaboration, and individualized care strategies are supported by the positive clinical outcomes achieved during the case report. The experience provides a model care plan that can be applied to similar cases and contributes to the nursing literature, particularly in the areas of patient safety, quality of care, and multidisciplinary coordination. In this context, the study highlights the advantages offered by the model and the importance of the care strategies developed in this case for other nursing practitioners, thus informing future practice.

Conflict of Interests
The authors declare that there is no conflict of interest in the study.

Financial Disclosure
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Patient Informed Consent
The study was conducted after obtaining informed consent from the family.

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