

## APPLICATION OF THE OUTCOME-PRESENT STATE TEST MODEL IN PATIENT WITH CONGESTIVE HEART FAILURE

### APLICAÇÃO DO MODELO OUTCOME PRESENT STATE TEST EM PACIENTE COM INSUFICIÊNCIA CARDÍACA CONGESTIVA

### APLICACIÓN DEL MODELO OUTCOME PRESENT STATE TEST EN PACIENTES CON INSUFICIENCIA CARDÍACA CONGESTIVA

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## ABSTRACT

This is a case study of an old female patient admitted in a medical-surgical unit due to decompensated heart failure. It aimed to identify, through the Outcome-Present State-Test (OPT) Model, a clinical reasoning model, the diagnosis, outcomes and nursing interventions. Data were collected using previously validated instrument and directed to cardiological conditions. Diagnoses, outcomes, and interventions were carried out with the use of the standardized nursing language of NANDA-I Inc., Nursing Outcomes Classification, and Nursing Intervention Classification. The main diagnosis was decreased cardiac output. The results and chosen interventions were related to cardiac and respiratory conditions, fluid overload, anxiety, fatigue, peripheral tissue perfusion, knowledge, and self-control of heart failure, vital signs, and improved sleep. The third generation of the Nursing process represented by the OPT helped to identify the patient's main needs and directed the planning of care based on the care priorities.

**Keywords:** Nursing Process; Nursing Diagnosis; Heart Failure; Nursing Care.

## RESUMO

*Trata-se de estudo de caso de paciente idosa, internada em unidade médico-cirúrgica por insuficiência cardíaca descompensada, que teve como objetivo identificar, por meio do modelo de raciocínio clínico Outcome-Present State-Test (OPT), os diagnósticos, resultados e intervenções de enfermagem. A coleta de dados foi realizada por meio de instrumento previamente validado e direcionado às condições cardiológicas. Os diagnósticos, resultados e intervenções foram realizados com o uso de sistemas de linguagem padronizado NANDA-I Inc., Nursing Outcomes Classification e Nursing Interventions Classification. O diagnóstico central foi débito cardíaco diminuído. Os resultados e as intervenções escolhidos foram relacionados aos estados cardíacos e respiratórios, sobrecarga hídrica, ansiedade, fadiga, perfusão tissular periférica, conhecimento e autocontrole da insuficiência cardíaca, sinais vitais e melhora do sono. A terceira geração do processo de enfermagem, representada pelo OPT, auxiliou na identificação das principais necessidades do paciente e direcionou o planejamento da assistência com base nas prioridades do cuidado.*

**Palavras-chave:** Processos de Enfermagem; Diagnóstico de Enfermagem; Insuficiência Cardíaca; Cuidados de Enfermagem

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## RESUMEN

*Estudio de caso de paciente de edad avanzada internada en la unidad médico-quirúrgica por insuficiencia cardíaca descompensada, con el objetivo de identificar, a través del modelo clínico de razonamiento Outcome Present State Test (OPT), los diagnósticos, resultados e intervenciones de enfermería. La recogida de datos se realizó mediante el instrumento previamente validado enfocado en las condiciones cardiológicas. Los diagnósticos, resultados e intervenciones se llevaron a cabo con el uso de sistemas estandarizados de lenguaje NANDA-I Inc., Nursing Outcomes Classification y Nursing Interventions Classification. El diagnóstico principal fue disminución del gasto cardíaco. Los resultados y las intervenciones elegidas estaban relacionados con las condiciones cardíacas y respiratorias, la sobrecarga de líquidos, ansiedad, fatiga, perfusión tisular periférica, conocimiento y autocontrol de la insuficiencia cardíaca, signos vitales y mejora del sueño. La tercera generación del proceso de enfermería, representada por los OPT, ayudó a identificar las principales necesidades del paciente y a conducir la planificación de la atención basada en las prioridades de atención.*

**Palabras clave:** Procesos de Enfermería; Diagnóstico de Enfermería; Insuficiencia Cardíaca; Atención de Enfermería.

## INTRODUCTION

The nursing process and the classifications of the elements of nursing practice are tools for performing a systematized care. Its use is predicted to be an essential activity of the nurse. It is mandatory and should be performed considering the nurses' cognitive and reflexive abilities for the effective evaluation of the care provided.<sup>1</sup>

In clinical practice, it is routinely verified that the nursing process has not been oriented the nurse in the decision-making process about the management of care. It has been performed in a ritualized way, and it does not emphasize the reflective and creative thinking of the professional.<sup>2</sup>

Studies reveal that this problem may be related to factors inherent to the structure of the nursing process, to the teaching of its stages, to the characteristics of the care practice scenarios, to the skills and competencies deficit of the professionals<sup>3,4</sup> and the difficulties in the critical thinking and clinical reasoning.

Critical thinking must be present in patient care<sup>5</sup> and involves the skills and attitudes necessary for the development of clinical reasoning, based on existing knowledge and the context in which experiences of interpreting observable data occur. Clinical reasoning refers to the mental processes involved in health care, and it is present in the nurse's actions and care decisions.<sup>6</sup>

Contemporary nursing practice is focused on results and the complex analysis of multiple patient conditions. Given this context, the Outcome-Present State-Test (OPT) is cited as a tool to aid clinical reasoning and, consequently, to stimulate new cognitive abilities.<sup>7</sup>

In the literature, it is verified that the knowledge about the profile of the nursing diagnoses of people with cardiovascular affections is based on a traditional and linear model of evaluation. No research was identified on these diagnoses with the use of the OPT model, which is based on the proposal of this research.

Instead of considering one problem at a time, the OPT requires several problems considered simultaneously, so there is discernment about what necessity is central and most important in all other problems. It is a more circular model that ex-

poses several problems, and it gives nurses the opportunity to focus on why and how to act to promote or carry out the transition from a present state to a desired state.<sup>2</sup>

Using OPT can more effectively target service planning and documentation. It represents a strategy to be implemented in practical scenarios so nurses can use the nursing process as guiding patient care.

Thus, the objective of this study was to identify the central nursing diagnoses, results, and interventions for a patient with congestive heart failure through the OPT clinical reasoning model.

## METHOD

This is a case study conducted at a Clinical and Surgical Internment Unit for the cardiovascular specialty, with capacity for 77 beds, of a teaching hospital in the interior of the state of São Paulo. The hospital is a large public institution, linked to 102 cities in the northwest region of the state of São Paulo, with a total of 629 beds, having 53,000 appointments per month.

The patient was selected from a sample of 50 subjects who participated in the study entitled "Nursing diagnoses of patients with cardiovascular diseases" with data collection from 01.07.2015 to 01.31.2016.

An instrument was used in three parts: a) identification data and sociodemographic characterization; B) clinical data (personal and family history, medical diagnosis and results of examinations); C) an anamnesis route and physical examination aimed at the evaluation of the human responses of patients with cardiovascular diseases, structured in the NANDA-I domains and Gordon's functional health standards, previously validated and tested.<sup>8</sup> An interview, observation and physical examination of the patient were used as well as medical records and test results. The application time of the instrument was 70 minutes.

The diagnostic reasoning process was performed using the OPT model, considering the phases: patient history (data collection); cue logic (evaluation of the relations between nursing di-

agnoses, based on systemic thinking and synthesis); present state (actual situation of the patient at the time); outcome state (expected results); testing (selection of outcome indicators); decision-making (choice of interventions); and judgment (evaluation).<sup>7</sup>

Nursing diagnoses were described using NANDA-I Inc.'s standardized nursing language,<sup>9</sup> the results were described by Nursing Outcomes Classification (NOC)<sup>10</sup> and interventions by the Nursing Intervention Classification (NIC).<sup>11</sup>

It should be noted that data collection and nursing diagnoses were performed independently by two trained and competent nurses in the cardiovascular evaluation and standardized nursing language NANDA-I, NIC, and NOC (master's and advisor), with the aim to verify the agreement between the evaluators. In the case of disagreements, the information collected would be reviewed through the instrument or reassessment of the patient. However, the data were 100% concordant. The results, indicators, and interventions were carried out jointly by the researchers.

The clinical case presented in this study is from Mrs. Maria (fictitious name), admitted to the clinical and cardiologic surgical unit for the treatment of decompensated congestive heart failure (the words highlighted in italics indicate altered health needs).

## SUMMARY OF THE PATIENT HISTORY

Maria, 72 years old, widow, incomplete elementary school and retired. She was hospitalized for diagnosis of decompensated congestive heart failure. She has had hypertension for more than 20 years, controlled by medications. Six months ago, she had an ischemic stroke, with no sequels. She reports that the mother died from heart disease.

The altered clinical and laboratory tests were: *creatinine (6.0 mg/dL), C-reactive protein (1.00 mg/dL), echocardiogram: left ventricular hypertrophy, ejection fraction 34%, left ventricular contractile dysfunction of important degree, mitral and aortic insufficiency and pulmonary arterial hypertension.*

Vital signs at the time were: blood pressure of 130/70 mmHg; Heart rate of 60 bpm; *Respiratory rate of 24 rpm*; Body temperature of 36.4°C and pain of zero degrees on the scale of zero to 10. The patient *reports not consider herself a healthy person due to health complications that began 10 years ago.* She reports taking medications at home (*warfarin, losartan potassium, hydrochlorothiazide, metoprolol, amlodipine besylate, acetylsalicylic acid, omeprazole.*)

She reports that she follows up on her illness in the basic health unit and she is assiduous. She has 80 kg and 1.63 m in height, with a *body mass index of 33.19 kg/m<sup>2</sup> (obesity grade 1).* She has *cereals, grains, fatty meats, eggs and derivatives, pasta, bread and sweets, vegetables, and fruits* every day. She takes at most 1 liter of fluids in 24 hours.

She drinks soda and milk once a week, and she claims never to drink coffee and tea. Spontaneous diuresis, light yellow in color. *Positive water balance (+750 mL/24h).* Daily evacuations, with a pasty consistency. *Globular and flaccid abdomen.* At the percussion, she had a tympanic sound in all quadrants and, on auscultation, normoactive hydro-aero noises. Flat thorax, *dyspneic respiratory pattern, with diminished pulmonary expandability at the apex and bilaterally base,* present thoracic vocal frisson and clear lung sound percussion. When auscultation, there were *vesicular murmurs diminished in bases and crepitation in apex and pulmonary bases.*

*Bilateral jugular stasis,* rhythmic and non-bloating carotids, non-palpable *ictus cordis* due to obesity and large breasts, rhythmic, normal-phonemic sounds with the absence of murmurs. *Brachial, radial, femoral, right and left wrists present and filiform, with diminished peripheral perfusion in the upper and lower limbs (five seconds).* *Cold temperature at the extremities* and lukewarm in the rest of the body, tactile and thermal sensitivity preserved.

*Edema in lower limbs of intensity +3/+4 in the locker signal. She feels unable to take care of herself as she shows fatigue at the slightest effort.*

*She states that she is having difficulty falling asleep due to dyspnea and she is feeling tired when she wakes up. She reports partial knowledge about the risk factors for cardiovascular diseases, with only the smoking, alcohol use and sedentary lifestyle reported by the primary care physician. She does not avoid fatty foods and does not control the amount of salt that she puts in the food because she affirms that she was not oriented about changes in these habits.*

She maintains eye contact and shows calm facial expression. When she asked the patient how she would describe it, she responded as a sick and hopeful person. She claims to be able to deal with difficult problems and situations that may occur. She says she feels good about herself. When she needs help or support, she talks to her daughter and verbalizes that it helps her to cope with the problem.

She comments that, besides the doctor, her daughter assists in her treatment. She claims to have no active sexual relationship and that this is not a problem for her. Mrs. Maria reports that there were no significant changes in her life in the last 12 months and there has been no decrease in interest in solving her problems in the last 12 months.

*She acknowledges being a little anxious and nervous about not being able to sleep well at night because of dyspnea.* She claims that she has prayed and that the religion helps at all times in her life. Saline peripheral venous access in the left upper limb and without phlogistic signs.

This study was preceded by approval by the Human Research Ethics Committee under number 42109415.3.0000.5415. The participant was approached during the hospitalization,

and the objectives of the research were presented and the Informed Consent Form.

## RESULTS AND DISCUSSION

For the resolution of the case of Mrs. Maria, after collecting data, the nurse elaborated the cue logically. This stage allows the nurse to identify the main problem of the patient, which is represented by the central diagnosis, that is, the one that is related to the other nursing diagnoses.

The central diagnoses elaborated for this clinical case, in priority order were: decreased cardiac output, the risk of bleeding and deficient knowledge (Figure 1).

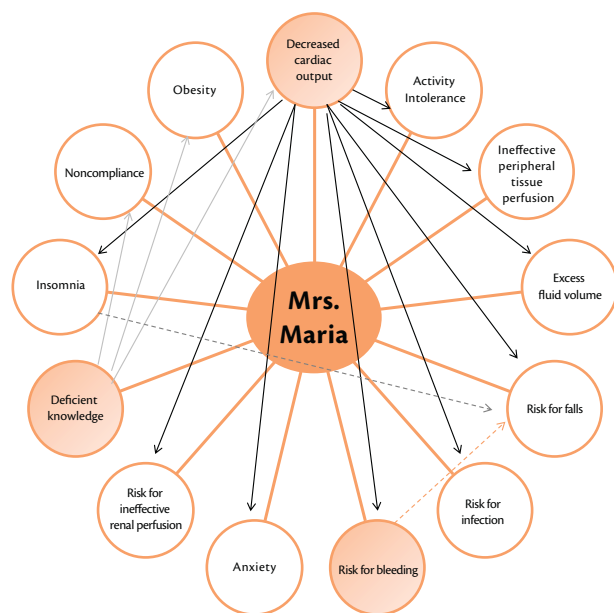


Figure 1 - Representation of the nursing diagnoses considered for the clinical case, its connections, and central nursing diagnoses. São José do Rio Preto, 2016.

The present state is the stage in which the nurse describes the diagnostic statement with the related factors or risk and defining characteristics.

In this way, the present state of Mrs. Maria is described as follows:

- decreased cardiac output (00029) related to altered contractility, altered preload, altered post load, characterized by jugular vein distention, edema, fatigue, dyspnea, decreased peripheral pulses, increased pulmonary vascular resistance, decreased ejection fraction, respiratory sounds, and anxiety disorders;
- risk of bleeding (00206) related to the treatment regimen;
- deficient knowledge (00126) about risk factors for cardiovascular diseases, related to insufficient information, char-

acterized by deficient knowledge and inadequate follow-up of instructions.

Decreased cardiac output is the main central diagnosis, since from it, the other arrows appeared, indicating that due to it, other diagnoses become present.<sup>12</sup>

The failure of the heart pump can lead to several problems, which arise from two basic mechanisms: a) inability of the heart to pump enough blood to the body; B) renal compensatory mechanisms of abnormal retention of sodium and water, causing pulmonary congestion due to increased blood volume and venous return.<sup>13</sup>

Faced with this, the patient will complain of fatigue and dyspnea, which are common and represent early symptoms of pulmonary congestion. Associated with this, there are jugular venous distention and adventitious respiratory sounds, such as diffuse crackles that Mrs. Maria presents and causing a decrease in thoracic expandability.

Thus, the diagnosis of nursing activity intolerance becomes secondary because of the decreased cardiac output.

Gravitational edema occurs due to the decrease in cardiac output because of myocardial failure. Elevation of the systemic venous pressure hinders the venous return of the interstitial fluid to the capillary and water accumulates in the interstitium.<sup>14</sup> In this case, positive fluid balance indicates a decrease in urine output, secondary to reduced blood circulation to the kidneys, markers that assess renal function, such as creatinine.<sup>15</sup> Therefore, the diagnoses of excessive fluid volume and risk for ineffective renal perfusion were considered secondary.

Mrs. Maria's wrists are filiform, the upper and lower limbs are cold and with peripheral perfusion for five seconds as a result of peripheral vasoconstriction, which occurs to divert the blood to the target organs. The diagnosis of ineffective peripheral tissue perfusion was considered secondary because it was the central diagnosis under discussion.

Nursing diagnoses insomnia and anxiety are also considered secondary, as they occur due to pulmonary congestion and dyspnea, caused by decreased cardiac output.

The risk for infection and risk for falls are decreased by cardiac output, indicating that with the improvement of the clinical picture, the patient can continue the treatment at home and not be exposed to the vulnerabilities associated with these risk diagnoses (hospital environment, catheters, potentially dangerous drugs, acute disease state).

The risk of bleeding occurs due to the use of anticoagulant medications needed in many heart diseases, such as congestive heart failure.

This diagnosis could be considered secondary, but Mrs. Maria has used anticoagulants at home for years (warfarin and acetylsalicylic acid), having an increased C-reactive protein, and suffering from a previous ischemic stroke. Also, she has

arterial hypertension and advanced age, which constitute risk factors for atherosclerosis.<sup>16</sup> Thus, it is concluded that after the stabilization of acute heart failure, the patient will continue to use these medications. The risk of bleeding is part of the central diagnoses and, when resolved, it will impact the reduction of the risk for falls.

The patient has unhealthy eating habits, she does not avoid salt and eats excess fatty foods. She does not adhere to the lifestyle changes advocated because she said not to know some risk factors for cardiovascular diseases, like feeding, for example. From this, the diagnoses of noncompliance and obesity were listed as secondary to deficient knowledge (central). It is noteworthy that other uninvestigated factors could influence the patient's lack of adherence and obesity, such as depression, self-esteem, motivation, self-efficacy, and binge eating.

Nursing diagnoses identified as secondary in this study were high in the literature, such as anxiety, insomnia, excessive fluid volume and activity intolerance.<sup>18-22</sup>

Research conducted in the United States at three hospitals identified four main nursing diagnoses of 302 elderly patients with heart failure: activity intolerance, decreased cardiac output, risk for falls, and deficient knowledge.<sup>23</sup>

An integrative review conducted in the Latin American Caribbean Literature on Health Sciences (LILACS), SCIELO, MEDLINE and specific databases found the main validate nursing diagnoses in the cardiology area between 2000 and 2010:

- activity intolerance;
- decreased cardiac output;
- spiritual distress;
- deficient knowledge;
- excessive fluid volume;
- ineffective airway clearance;
- ineffective peripheral tissue perfusion;
- fear and anxiety in preoperative cardiac surgery;
- pain.<sup>24</sup>

Many of the studies were conducted retrospectively, and in others, the authors did not explain the method used for clinical reasoning. Also, the steps of the OPT model were not found in these studies. Thus, it is concluded that these diagnoses may have been established based on a linear model, which does not value the connection and relation between them.

After the diagnosis, the nurse chooses the results that are expected to occur with the patient (outcome state). This choice is made from the diagnoses inferred to the patient (present state).

The results and then, the interventions were described only for the main nursing diagnosis of Mrs. Maria: decreased cardiac output.

The results were: cardiopulmonary status (0414), respiratory status: ventilation (0403), renal function (0504), water overload severity (0603), anxiety level (1211), fatigue level (0007), tissue perfusion: (0407), self-management of heart failure (3106) and knowledge: control of heart failure (1835).<sup>10</sup>

Nurses should measure patient outcomes before and after interventions. This allows them to evaluate the evolution of their patients' health status over time.<sup>11,25</sup>

Next, the nurse identifies the indicators that support the nursing results (called as the testing phase). Cardiopulmonary status was a result selected for Mrs. Maria. There are 32 indicators that evaluate the progress of this outcome. The nurse should select the pertinent indicators for the patient and classify them within level one to five, one representing the least desirable state, behavior or perception and five representing the most desirable state. Indicators of Mrs. Maria's clinical picture are peripheral pulses, respiratory rate, breath depth, urine output, activity intolerance, jugular stasis, peripheral edema, pulmonary edema, light exertion dyspnea and fatigue (Tables 1 and 2).

Table 1 - Result of cardiopulmonary status and its indicators, measured by the large deviation range from the normal variation to the one without deviation from the normal change

Cardiopulmonary status (0414) <sup>10</sup>			
	Indicators	Present state (06.01.2016)	Outcome state
041403	Peripheral pulses	3	5 (06.02.2016)
041406	Respiratory frequency	3	5 (06.02.2016)
041407	respiratory rhythm	2	4 (06.02.2016)
041408	Depth of inspiration	3	5 (06.04.2016)
041410	Urine output	3	4 (06.02.2016)

1. Severe deviation from normal variation; 2. Substantial deviation from normal variation; 3. Moderate variance of normal variation; 4. Mild deviation from normal variation; 5. No deviation from normal variation. Source: Moorhead et al.<sup>10</sup>

Table 2 - Results of cardiopulmonary status and its indicators, measured by the severe scale

Cardiopulmonary status (0414) <sup>10</sup>			
	Indicators	Present state (06.01.2016)	Outcome state
041414	Activity Intolerance	3	4 (06.02.2016)
041419	Jugular stasis	3	4 (06.02.2016)
041422	Peripheral edema	2	4 (06.06.2016)
041423	Pulmonary edema	2	4 (06.05.2016)
041425	Dyspnoea with mild exertion	2	4 (06.05.2016)
041426	Fatigue	2	4 (06.05.2016)

1. Severe; 2. Substantial; 3. Moderate; 4. Mild; 5. None. Source: Moorhead et al.<sup>10</sup>

It should be emphasized that the graduation of the indicators chosen by the nurse is subjective since the taxonomy does not describe, for example, the difference between severe, substantial, moderate and mild fatigue. These parameters are chosen according to the professional's knowledge and experience.

Next, the other results and their indicators for the diagnosis of decreased cardiac output are highlighted,<sup>10</sup> in a descriptive way:

- respiratory state (0403): ventilation: adventitious respiratory sounds (040310);
- renal function (0504): the balance between ingestion and elimination in 24 hours (050402); Elevated serum creatinine (050427);
- the gravity of water overload (0603): edema of legs (060305); rales (060310); decreased urine output (060319);
- the level of anxiety (1211): verbal anxiety (121117); sleep disturbances (121129);
- Fatigue level (0007): sleep quality (000720); activities of daily living (000715);
- peripheral tissue perfusion (0407): capillary filling in the fingers (040715); capillary filling in the toes (040716); skin temperature at the extremities (040710); right brachial pulse strength (040732); left brachial pulse strength (040733); right radial pulse strength (040734); left radial pulse strength (040735); right femoral pulse strength (040737); left femoral pulse strength (040736); right pedal pulse strength (040738); left pedal pulse strength (040739).

Decision making involves the selection and implementation of specific nursing interventions that can be performed through the Nursing Intervention Classification (NIC). The nurse identifies the nursing interventions and actions that will help the patient achieve his desired results.<sup>11</sup>

Nursing interventions for decreased cardiac output are: cardiac care, vital signs monitoring, water control, water monitoring, respiratory monitoring, sleep improvement, monitoring of the upper extremities, positioning and reduction of anxiety.<sup>11</sup>

Each nursing intervention has several nursing activities, which must be chosen according to the needs of the patient. Table 3 presents the nursing activities for the cardiac care intervention.

The nurse must adjust the activities described for the reality of the patient and the service, rising to the prescriptions. For example, monitoring vital signs every four hours; performing comprehensive evaluation of peripheral circulation: checking edema on right and left ankles by tape measure at 8:00 am and 8:00 pm; guiding the patient and the family regarding the modalities of treatment, activity restriction, and evolution, through the didactic manual of the unit, in an expository way, using a validation technique to confirm the patient's learning at 12:00.

Table 3 - Interventions for Nursing heart care and its activities<sup>11</sup>

**Heart Care:** Limitation of complications resulting from an imbalance between supply and demand of oxygen in the myocardium for patients with impaired cardiac function symptoms.

**Activities:**

- Monitoring the patient physically and psychologically as a routine, according to the institution's policy.
- Making sure the level of activity does not compromise cardiac output or causes cardiac events.
- Performing comprehensive evaluation of peripheral circulation (checking the pulse, edema, capillary filling, color and temperature of the extremity), routinely, according to the institution's policy.
- Monitoring vital signs frequently.
- Observing signs and symptoms of cardiac output reduction.
- Monitoring respiratory status for symptoms of heart failure.
- Monitoring water balance.
- Evaluating changes in blood pressure.
- Guiding the patient and the family regarding the modalities of treatment, activity restriction, and evolution.
- Monitoring tolerance to patient activity.
- Monitoring for dyspnoea, fatigue, tachypnea and orthopnea.
- Establishing a supportive relationship with the patient and the family.
- Forwarding to heart failure program or cardiac rehabilitation program for education, evaluation and targeted support to increase activity and return to life as appropriate.

Source: Bulechek et al.<sup>11</sup>

The prescribed activities must be understood by all members of the nursing team and it is up to the nurses to decide what activities will be part of the patient's action plan and how best to execute them, always considering evidence-based practice.

Judgment is the process of drawing conclusions based on the measures taken; that is the nurse will judge whether the patient has benefited from the care provided and if he has achieved the expected results. At this stage, the nurse uses reflection, making observations while thinking about the patient's situations.<sup>11</sup>

Considering the clinical case, the nurse evaluates whether Mrs. Maria exhibits peripheral pulses, urine output, frequency, rhythm, and depth of breathing without deviations from the normal range. He also verifies if there is an intolerance to activity, jugular stasis, peripheral edema, pulmonary edema, dyspnea with a light effort and fatigue reached the desired goal (slight or no change) in the time recommended by the professional.

## CONCLUSION

It was concluded that the decreased cardiac output was the central nursing diagnosis for the patient with congestive heart failure and that the OPT model favored the identifica-

tion of the priorities of the care plan, based on the main needs of the patient and it helped in the choice of results and targeted interventions.

The OPT model can be considered a useful tool for the nurse, who currently performs many bureaucratic, administrative and care activities, with a small number of professionals.

This study is limited by its design, and it is not possible to follow up the patient in the long term to verify the effectiveness of nursing care.

Also, these results cannot be generalized to other clinical settings, since it is the case study of only one patient.

However, the results obtained enabled to understand the specific characteristics of the patient with clinical manifestations of congestive heart failure, as well as the main results and interventions, allowing nurses to expand their possibilities of action.

Also, it elucidates the need for future studies that improve the OPT model and to produce new scientific evidence for implementation in clinical and teaching practice.

This study contributed to the strengthening of nurses' clinical and cognitive reasoning skills for the execution and documentation of the nursing process, highlighting the patient's central problems and facilitating the clinical decision-making process. It also offers tools to strengthen the teaching of clinical reasoning to nursing students, undergraduate and postgraduate students.

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