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**Reports of Experience**

# ORGAN PROCUREMENT AND THE BODY DONOR-FAMILY BINOMIAL: INSTRUMENTS TO SUBSIDIZE NURSING APPROACH

## *CAPTAÇÃO DE ÓRGÃOS E O BINÔMIO FAMILIARES/CORPO: INSTRUMENTOS PARA SUBSIDIAR A ABORDAGEM DO ENFERMEIRO*

## *CAPITACIÓN DE ÓRGANOS Y BINOMIO FAMILIA/CUERPO: INSTRUMENTO PARA SOPORTE A ENFOQUE DEL ENFERMERO*

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We aimed to describe the design of instruments to subsidize the care for the body donor-family binomial in the perspective of the process of organ procurement. The Activities of Living Model grounded the instruments for data collection. We identified 33 possible diagnoses, 14 associated to the body preservation and 19 to responses from family members facing grieving and the decision on whether to authorize the donation. We selected 31 interventions to preserve the body for organs/tissues procurement, and 25 to meet the needs for information, coping and support for the family decision. The nursing diagnoses, interventions, and outcomes were registered according to the North American Nursing Diagnosis Association, Nursing Intervention Classification, and Nursing Outcome Classification, respectively. The instruments follow the legislation of the Board of Nursing and the donor/organ procurement, needing to be validated by field experts.
**Descriptores:** Tissue and organ procurement; Death; Nursing Processes; Nursing Theory.

Objetivou–se descrever a construção de instrumentos para subsidiar os cuidados ao binômio corpo doador e familiares na perspectiva do processo de captação de órgãos. O Modelo das Atividades de Vida alicerçaram os instrumentos de coleta de dados. Foram identificados 33 possíveis diagnósticos, sendo 14 vinculados à preservação do corpo e 19 às respostas de familiares diante do luto e do impasse de autorizar ou não a doação. Foram selecionadas 31 intervenções para manter o corpo em condições para captar órgãos/tecidos e 25 para atender às necessidades de informação, enfrentamento e apoio para decisão dos familiares. Os diagnósticos, as intervenções e os resultados de enfermagem foram registrados segundo *North American Nursing Diagnosis Association*, *Nursing Intervention Classification* e *Nursing Outcome Classification* respectivamente. Os instrumentos atendem às legislações do Conselho de Enfermagem e de doação/captação de órgãos, necessitando ser validados por peritos da área.
**Descritores:** Obtenção de tecidos e órgãos; Morte; Processos de Enfermagem; Teoria de Enfermagem.

El objetivo fue describir la construcción instrumentos para subsidiar la atención al binomio cuerpo donador y familia en el proceso de recuperación de órganos. El Modelo de las actividades de Vida sustenta la forma de recopilación de datos. Se identificaron 33 posibles diagnósticos, 14 vinculadas a la preservación del cuerpo y las respuestas de 19 miembros de la familia antes de la disputa del duelo y sobre la conveniencia de autorizar la donación. Se seleccionaron 31 intervenciones para mantener el cuerpo en una posición para capturar órganos y tejidos y 25 para satisfacer las necesidades de información, afrontamiento y apoyo a las decisiones de la familia. Los diagnósticos, intervenciones y resultados de enfermería se registraron segunda *North North American Nursing Diagnosis Association*, *Nursing Intervention Classification* e *Nursing Outcome Classification*, respectivamente. Los instrumentos cumplen con las leyes de la Junta de Enfermería y la contratación de los donantes/órgano, con necesidad de evaluación por expertos en la materia.
**Descriptores:** Captación de tejidos y órganos; Muerte; Proceso de Enfermería; Teoría de la Enfermería.

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## INTRODUCTION

Organ procurement and donation is a complex process and demands decision-making in a short period of time, causing it to be dramatically experienced by family members of potential donors, since in the same moment they are dealing with death, emerges the need to authorize the removal of organs/tissues of the relative's body. Therefore, it is necessary to respect the family, so that they make a free and autonomous decision[1-2].

The donation process starts from brain death, which can be defined as the total and irreversible loss of brain functions, of known cause and verified with criteria established in Resolution No. 1.346/91[3-4]. The steps that involve the transplantation process that triggers the organ and tissue procurement are: Communication of a patient's death to family members, complementary exams for brain death diagnosis, notification of potential donors to the Organ Notification, Procurement, and Distribution Center (CNCDO), and transfer the notification to the Organ Procurement Organization (OPO)[5-6].

The donor's family authorization constitutes the informed consent, in accordance with Law 10.211[5-6], consistent with the onset of the process of organ and tissue procurement. This means that the removal of organs, tissues and body parts from deceased people for transplantation or other therapeutic purposes will depend on the consent of the spouse or relative; of legal age; obeying the line of succession, direct or collateral, including second degree; signed on document and endorsed by two witnesses present at the verification of death[7].

The inclusion of nurses in the process of organs and tissues transplantation, especially in the stage of organ procurement[8], has peculiar aspects, once it is relevant to the profile of nurses and their team in the care of the body, regardless if it will be used or not for organ procurement. The specificity of including nurses in this stage consists in the purpose of performing their work activities and because it improves the family approach for authorizing the removal of organs and tissues in a multidisciplinary context. Considered as a link of credibility in the process of care, the nurse is an essential professional for the performance of such an approach to family members.

Nurses work activities need to be grounded in scientific bases and characterize operational feasibility. The Board of Nursing recommends the systematization of nursing care as a strategy for structuring their work practice and the documentation to register some steps in instruments, i.e. written communication of key information, problems, prescriptions, and assessment of the planned care[9].

This proposal aims to describe the design of instruments to subsidize nursing care to the body donor-family binomial, from the perspective of the process of organ procurement. The use of theoretical-philosophical, methodological and communicative Nursing framework aims to instrument nurses in the care of the body (potential donor of organs and tissues) and in approaching the potential donor family (legally responsible for authorizing the removal of organs/tissues) during nursing consultation and in an interdisciplinary context.

The following arguments justify this current research: 1) the authors' approach with the death issue in teaching, assistance, and research activities; 2) the limitation of publications on the inclusion of nurses in the process of organs procurement and in the perspective of Nursing Consultation; 3) the need to document the nursing care – stages of data collection, diagnosis, prescriptions and outcomes – in accordance

with current legislation; 4) the design of appropriate technology to the care and nurses' performance in the process of organ procurement from the perspective of the body donor-family binomial; 5) the possibility of reconciling theoretical models, taxonomies of language standardization for diagnoses, interventions and outcomes with legislation and technical content; 6) the possibility of structuring care in frameworks that allow sharing experiences and measurement of nursing results internationally.

## METHODS

This is an academic experience report in developing instruments in order to register the stages of data collection, nursing diagnosis, interventions, and outcomes during the nursing care process of the body donor-family binomial, from the perspective of the process of organ procurement.

The instruments design was carried out in the class of "Philosophical Bases for Nursing" of the Stricto Sensu Graduate Program, Masters in Nursing, School of Nursing, Universidade Federal de Juiz de Fora, from August 2010 to March 2011.

Guiding questions were used to trigger the academic experience. They motivated the authors to select an object whose thematic was approached, from which they could design instruments for structuring nursing practice. The guiding questions were: How to reconcile a nursing object with theoretical-philosophical frameworks, and with diagnoses taxonomies, interventions and outcomes? How to create knowledge and/or technology for areas of nursing performance? What are the gaps identified in clinical practice regarding the selected object? Is it possible to structure nursing practice in accordance with the legislation that deals with the systematization of nursing care?

Given the approaching perspective that the process of organ procurement involves a complex and conflicting physical and emotional scenario, there was the evident need to gather a specific and organized set of knowledge able to support the nurses' performance in this context, in a scientific and evidence based approach[12-13].

To define the steps to be characterized in the instruments, their sequence, and how to articulate them in order to reach a proposed nursing approach in the organ donation/procurement and distinguish them from those that should be intended to clinical reasoning, diagnosis and decision-making process performed by nurses (expression of the clinical method applied to the profession), we adopted the concept of Systematization of Nursing Care (SAE)[14].

The Activities of Living Model[11:9-12] was adopted as the theoretical-philosophical structure and is compatible with the Systematization of Nursing Care: "an articulated and communicated concept of the reality created or discovered within nursing or relevant to it, for the purpose of description, explanation, prediction, or prescription of nursing care"[12:17].

The number of instruments was established based on the concern for reducing the amount of pages, according to the stages of data collection, diagnosis, interventions, results, and outcomes, and in accordance with Resolution 358/2009[9]. This concern enabled to reconcile five instruments on four pages, keeping in mind that we merged the data collection instrument with the developments, and the interventions with the outcomes. The search for a theoretical framework aimed to subsidize, in theoretical bases of the nursing area, the implementation of the nursing process in clinical practice.

For language standardization and support of this proposal at the international level, and for elaboration of nursing diagnoses, interventions and outcomes, we used the taxonomies from: North American Nursing Diagnosis Association (NANDA)[15], Nursing Intervention

Classification(NIC)[16] and Nursing Outcome Classification (NOC)[17], respectively, also known as NNN taxonomy (NANDA, NIC and NOC).

## RESULTS AND DISCUSSION

To implement the instruments aimed at subsidizing the implementation of nursing consultation, we designed an instrument for data collection, containing the possible nursing diagnoses and an instrument with nursing interventions and outcomes.

| | | |
|---|---|---|
| | **Name**: | **Medical record**: |
| | **Death**: date and time | **Diagnosis compatible with procurement**: ☐Yes ☐No |
| | **Verification of death according to protocol**: team/time | |
| **Name of family member(s)**: | | |
| **Age**: | **Kinship**: | **Education**: |

| THEORETICAL FRAMEWORK | ITENS A SEREM AVALIADOS | DESCRIPTION |
|---|---|---|
| Death and dying | **Feeling:** facing own death; the death of a family member.<br>**Behavior:** facing the death of a family member: use of defense mechanisms and reactions.<br>**Religion, beliefs and personal values:** concepts, rituals, meaning attributed to the body;<br>**Existential Meaning of Solidarity:** | |
| Expressing sexuality | **Affection:** bond with the deceased one.<br>**Potential for solidary experiences:** solidarity to others in difficult health situations in a time of personal suffering; perpetuation of the meaning of existence;<br>**Feelings and bonds:** satisfaction and prolongation of the bond. | |
| Maintaining a safe environment | **Association between levels x infrastructure and transplantation potential:** institutional, local, state and national instances.<br>**Exams and compatibility:** material collection, referral, and availability of results for testing compatibility with potential receivers.<br>**Body preservation/type of procurement:** reconciling time for diagnosis/procurement, family acceptance and infrastructure available<br>**Potential for use:** | **Potential for use:** ☐total ☐partial<br>**Procurement:** ☐total ☐partial, specify: |
| Communication | **Communication of death to family members:** time<br>**Positioning:** Favorable positioning to adhesion of organ donation in life, approach time | |
| Breathing | **Mechanical ventilation:** compatibility with preservation of organs; parameters (mode, $FiO_2$=100%; sensitivity; vasoactive drugs; $PSO_2$)<br>**Maintenance of cerebral cardiopulmonary monitoring:** type, parameters, frequency. | |
| Eating and drinking | **Maintenance of caloric intake:** via; flow/minute; compatibility of basal needs in order to preserve organ/tissue | |
| Elimination | **Urinary:** drip drug and eliminated volume control<br>**Exoneration:** frequency, consistency, amount<br>**Perspiration:** frequency, temperature, location<br>**Pulmonary:** consistency, quantity and color (TCT/ETT aspiration)<br>**Ocular:** aqueous humor, artificial lubrication<br>**Compartment syndrome:** BP, HR, flow (if capable of measurement)<br>**Bleeding:** melena, hematemesis, epistaxis<br>**Drained volumes:** feature, quantity, location. | |
| Washing and dressing | **Hygiene and human dignity:** personal comfort (oral, body, intimate, nails, hair, maintaining the physical integrity, and prevention of decubitus ulcer)<br>**Removal of secretions and excretions:** drainages<br>**Environmental hygiene and odor reduction:** environmental comfort (noise control, keeping bedding clean and crisp, allowing the presence of family members if requested). | |
| Controlling temperature | **Body temperature:** artificial heating; measurement; balance between body and environmental temperature. | |
| Mobilization | **Position and comfort:** changing position<br>**Support equipment:** type and quantity (alternating pressure mattress, pillows, cushions, sheets) | |
| Working and playing | Relevant data about family members | |
| Sleeping | **Human dignity:** Ensuring respect for the body. | |

**Figure 1 -** Instruments for data collection according to the Activities of Living Model for the process of organ procurement, Juiz de Fora-MG, Brazil, March 2011.

Source: Instrument developed by Arreguy-Sena, Ferreira e Alves, 2011[18]

The instrument for data collection was designed to subsidize the interview. It consists of two basic cores of approach: the aspects of the family member and the aspects of the body to be cared for (Figure 1) for which we present the guiding questions that may support a data collection process on the answers of the binomial facing the organ donation process. The choice of reconciling the approach to the family and the body in the same instrument represents a peculiar strategy of the organ procurement process.

The instrument structure includes data about participants characterization, and then three columns: on the left, the interviewees' daily activities of living (constituting the core-structural axis of the selection process for the content to be covered according to the theoretical approach); in the middle column, the content to be investigated (aspects that will provide evidences to structure the defining characteristics and identify the cause of the problems – related factors); and, in the right column, there is a space for free register of information obtained (Figure 1).

Since this proposal was designed from the authors' experience, it has not been validated in clinical practice, so adaptation alternatives were planned. In Figure 1, we present the version of the instrument that guides the content of data collection interview (filling mask), and in the version to be completed by the nurse the second and third column should be merged, and all the space should be available for written or digital record of impressions and information obtained. This was planned as a strategy to maximize the space and allow registering information that supports the decision making process of nurses.

Thinking about the possibility of computerization of the instrument, we predicted that the second and third column would merge, however the text containing the guiding questions would be available as temporary visual script until the completion of each topic in the electronic system. As each topic would be triggered for record, the guiding questions would be phased out or could be canceled if the content does not characterize the particular case in question.

The instrument designed for data collection has the potential to capture the degree of dependence for each situation of activities of daily living, measuring it in a range that goes from dependence to independence. Such alternative is compatible with apprehending the defining characteristics, related factors, and risk factors, i.e. providing the obtaining of potential structural elements of a nursing diagnosis according to NANDA taxonomy, besides bringing closer together the data collection stage and nursing diagnosis stage. This fact was idealized once the association between the two stages above mentioned is a transition moment that could provide a connection between data collection and diagnosis, to the point of characterizing a continuum of the process itself.

The instrument designed to register the nursing diagnoses contemplates the situations experienced by the authors in the process of body preservation and the possible problems of nursing diagnoses evidenced by relatives or guardians due to the process of coping with grief, loss, conflict of decision to consent or not with organs/tissues donation, or other ongoing or potential situations[18-20] (Figure 2). The analysis of the contents predicted in the instrument for data collection enabled the selection of 18 nursing diagnoses to characterize what relatives and guardians go through, and 15 diagnoses to contemplate the problems with the body preservation.

| Item | NURSING DIAGNOSES<br>Code: I= initially identified diagnosis; C= diagnosis being monitored; T= diagnosis solved; 0= absence of diagnosis<br>FAMILY MEMBERS OR GUARDIANS | Date | |
|---|---|---|---|
| 1 | **Grieving** (288) **related to:** ☐ death of a loved one **characterized by:** ☐ psychological suffering; ☐ maintaining the connection to the deceased; ☐ despair | | |
| 2 | **Risk for compromised resilience** (296) **related to:** ☐ presence of more than one crisis (death of family member and decision for donation) | | |
| 3 | **Readiness for enhanced coping** (271) **characterized by:** ☐ using a variety of strategies for emotion; ☐ using spiritual resources | | |
| 4 | **Dysfunctional family processes related to:** ☐ inadequate coping skills **characterized by:** ☐ guilt; ☐ growing conflict; ☐ inability to constructively deal with traumatic experiences; ☐ denial of problems; ☐ broken promises (previous desire to donate their organs and family decision); ☐ impaired family dynamics; ☐ powerlessness; | | |
| 5 | **Decisional conflict** (313) **related to:** ☐ deficit of support system; ☐ lack of experience in decision making; ☐ perceived threat to the values system; ☐ obscure personal beliefs/values; ☐ interference in decision making; **characterized by:** ☐ verbalizing feeling of anxiety when trying to reach a decision; ☐ verbalizing uncertainty about the choices; ☐ vacillation between alternative choices; Questioning: ☐ personal values; ☐ moral rules; ☐ own beliefs in trying to reach a decision | | |
| 6 | **Deficient knowledge** (198) **related to:** ☐ lack of familiarity with information resources; ☐ misinterpretation of information **characterized by:** ☐ misconduct; ☐ verbalization of the problem | | |
| 7 | **Stress overload** (281) **related to:** ☐ multiple concurrent stressors **characterized by:** ☐ expressing functioning difficulty; ☐ expressing problems with decision making | | |
| 8 | **Relocation stress syndrome** (259) **related to:** ☐ unpredictability of experience; ☐ losses; ☐ powerlessness **characterized by:** ☐ anxiety; ☐ depression; ☐ concern about change; ☐ loneliness | | |
| 9 | **Post-trauma syndrome** (262) **related to:** ☐ tragic occurrence involving multiple deaths **characterized by:** ☐ repeated memories of events (flashbacks); ☐ difficulty concentrating | | |
| 10 | **Anxiety** (264) **related to:** ☐ situational crises **characterized by:** ☐ uncertainty; ☐ suffering; ☐ difficulty concentrating; ☐ nervousness; ☐ cardiovascular excitement | | |
| 11 | **Impaired verbal communication** (201) **related to:** ☐ stress; ☐ psychological barriers; ☐ emotional conditions **characterized by:** ☐ lack of eye contact; Difficulty of:☐ using facial/body expressions; ☐ forming phrases or words; ☐ cannot speak; ☐ do not speak; ☐ improper verbalization | | |
| 12 | **Powerlessness** (210) **related to:** ☐ healthcare environment; ☐ helpless lifestyle; **characterized by:** ☐ apathy; ☐ verbal expressions of no control; ☐ guilt; ☐ dependence on others that may result in irritability; ☐ expression of doubt regarding the performance of the role; ☐ no participation in decision making when opportunities are offered; ☐ passivity; ☐ anger | | |
| 13 | **Risk for loneliness** (214) **related to:** ☐ affective deprivation | | |
| 14 | **Situational low self-esteem related to:** ☐ loss; **characterized by:** self-evaluation as: ☐ unable to handle events/situations; ☐ indecisive behavior, not assertive. | | |
| 15 | **Risk for situational low self-esteem related to:** ☐ environment control; ☐ loss | | |
| 16 | **Risk for impaired attachment related to:** ☐ physical barriers; ☐ separation | | |
| 17 | **Impaired social interaction related to:** ☐ absence of significant person; ☐ environmental barriers; ☐ communication barriers **characterized by:** ☐ inability to communicate/receive sense of social involvement; ☐ dysfunctional interaction with others; ☐ unsuccessful social interaction behavior. | | |
| 18 | **Readiness for enhanced relationship characterized by:** ☐ understanding the insufficient function of the partner (physical); ☐ development goals appropriate to the stage in the life cycle of the family. | | |
| | | | |
| | PRESERVATION OF BODY AND ORGANS | | |
| 1 | **Ineffective health maintenance** (94) **related to**: ☐ ineffective family coping; ☐ inability to perform adequate judgment; ☐ complicated grief; ☐ spiritual suffering **characterized by:** ☐ demonstrated lack of knowledge regarding basic health practice; ☐ inability to take responsibility to meet the basic health practices (organ donation); ☐ demonstrated lack of adaptive behavior to environmental changes (death of a family member) | | |
| 2 | **Risk for unstable blood glucose level** (103) **related to**: ☐ physical health status; ☐ food intake | | |
| 3 | **Impaired swallowing** (98) **related to**: ☐ neurological problems(brain death) **characterized by:** ☐ injury in the esophageal phase ☐ injury in the oral phase; ☐ injury in the pharyngeal phase | | |
| 4 | **Risk for electrolyte imbalance** (106) **related to**: ☐ impaired regulatory mechanisms | | |
| 5 | **Dysfunctional gastrointestinal motility** (132) **related to**: ☐ immobility; ☐ pharmaceutical agents; **characterized by**: ☐ abdominal distension; ☐ increased gastric residues; ☐ change in bowel sounds | | |
| 6 | **Impaired gas exchange** (136) **related to**: ☐ imbalance in perfusion ventilation; ☐ alveolar-capillary changes **characterized by**: ☐ abnormal skin color; ☐ abnormal arterial blood gases; ☐ hypercapnia; ☐ hypoxemia; ☐ hypoxia; ☐ abnormal arterial pH | | |
| 7 | **Ineffective airway clearance** (332) **related to:** ☐ presence of artificial airway; ☐ bronchial secretion; ☐ retained secretions **characterized by:** ☐ adventitious sounds; ☐ decreased breath sounds | | |
| 8 | **Risk for disuse syndrome** (145) **related to**: ☐ mechanical restraint; ☐ altered level of consciousness; ☐ paralysis | | |
| 9 | **Impaired urinary elimination** (116) **related to**: ☐ sensorimotor damage; ☐ multiple causes **characterized by:** ☐ urinary retention | | |
| 10 | **Feeding self-care deficit** (175) **related to**: ☐ neuromuscular **characterized by**: inability to: ☐ swallow, sufficient food or drink intake | | |
| 11 | **Bathing self-care deficit** (176) **related to**: ☐ neuromuscular **characterized by**: inability to: ☐ body wash; ☐body dry | | |
| 12 | **Toileting self-care deficit** (177) **related to**: ☐ neuromuscular **characterized by**: ☐ inability to perform proper intimate hygiene | | |
| 13 | **Dressing self-care deficit** (178) **related to:** ☐ neuromuscular **characterized by:** ☐ inability to maintain satisfactory appearance | | |
| 14 | **Risk for compromised human dignity related to:** ☐ loss of control over bodily functions; ☐ body exposure | | |
| 15 | **Ineffective thermoregulation** (370) **related to:** ☐ trauma; ☐ disease; ☐ environmental temperature fluctuation **characterized by:** ☐ cold skin; ☐ reduction in body temperature below normal standards | | |
| | | | |

**Figure 2 -** Instrument for diagnoses, according to NANDA, designed for situations of organ procurement and body preservation, Juiz de Fora-MG, Brazil, March 2011.

Source: Instrument developed by Arreguy-Sena, Ferreira e Alves, 2011[18].

It was structured in two axes containing possible diagnoses (wellness, risk, and actual): one regarding the care of the body, and the other regarding the approach to the family.

In the axis of diagnoses, they were sequentially numbered and presented in blocks to characterize the problems identified with relatives and with the body[17-20]. Each diagnosis has the components covered in the NANDA taxonomy (title, related factors/risk factors and/or defining characteristics). In order to better trace it in the taxonomy we added the page where it is found in NANDA taxonomy, in front of the title (diagnosis category). The box preceding each component of the diagnosis was designed to register if it is present or not in the case analyzed. This fact enables the individualization of care.

In the axis designed for registering the diagnoses identified in the body donor-family binomial, we provided a set of columns, each of which enabling to register, vertically, whether the diagnosis was identified in the case analyzed. This column allows verifying the evolution of the problems identified and a quick written record.

It is worth mentioning that there were spaces available for the additional diagnoses not covered by the instrument, contemplating both the problems of

relatives and of the body, and the checklist type record was designed in the electronic instrument.

The instrument containing the possible nursing interventions (31 and 25 interventions related to care of the body and of relatives, respectively) and assessment of nursing outcomes, presents 26 indicators to express the situation of the body and of relatives, respectively (**Figure 3**). This instrument was structured on four axes: 1) identification of the family member; 2) list of interventions with references of the location of nursing actions to deal with the body and with relatives; 3) list of indicators with respective measurement scales to deal with the body and with relatives, and their respective scales for the scheduling/monitoring; and 4) professional identification.

The compatibility of interventions and outcomes in the same instrument was done in order to reduce the number of pages and encourage the viewing of the connection between the stages. It is worth mentioning that, according to the NIC taxonomy, the interventions consist of "any treatment, based on clinical judgment and knowledge, performed by a nurse in order to increase the results of the patient/client", contemplating a set of therapeutic actions that can be consulted in the taxonomy itself or included in an institutional protocol. The interventions and outcomes, both for the family and for the body, were presented to ensure the binomial approach in the perspective of organs and tissues procurement.

To assess the results, we listed the indicators and added a Likert type scale (whose peak corresponds to the therapeutic desire intended) in order to enable the judgment and measurement of how much the therapeutic interventions were achieved. The instrument that consolidates the results has indicators to assess how much the process of organ and tissue procurement reached a favorable outcome from the perspective of supporting a conscious decision making of the family and ensuring the conditions necessary for preserving the body for potential organs and tissues procurement, if compatible.

**UFJF- School of Nursing**

Nursing Interventions and Outcomes (NIC and NOC Taxonomies)

**Name:**

| NIC Taxonomy - Nursing Interventions to the body | NIC Taxonomy - Nursing Interventions to family members |
|---|---|
| ☐ Total Parenteral Nutrition (TPN) Administration | ☐ Counseling |
| ☐ Airway Suctioning | ☐ Abuse Protection Support: Religious |
| ☐ Self-Care Assistance | ☐ Decision-Making Support |
| ☐ Ventilation Assistance | ☐ Grief Work Facilitation |
| ☐ Organ Procurement | ☐ Decision-Making Support |
| ☐ Technology Management | ☐ Caregiver Support |
| ☐ Artificial Airway Management | ☐ Emotional Support |
| ☐ Mechanical Ventilation control: invasive | ☐ Family Support |
| ☐ Incision Site Control | ☐ Organ Procurement |
| ☐ Incision Site Care | ☐ Deposition/Testimony |
| ☐ Eye Care | ☐ Documentation |
| ☐ Bed Rest Care | ☐ Values Clarification |
| ☐ Tube Care | ☐ Active Listening |
| ☐ Postmortem Care | ☐ Self-Responsibility Facilitation |
| ☐ Venous Access Device (VAD) Maintenance | ☐ Visitation Facilitation |
| ☐ Acid-Base Management | ☐ Crisis Intervention |
| ☐ Electrolyte Management | ☐ Conflict Mediation |
| ☐ Neurologic Monitoring | ☐ Body Image Enhancement |
| ☐ Vital Signs Monitoring | ☐ Coping Enhancement |
| ☐ Temperature Regulation | ☐ Support System Enhancement |
| ☐ Intravenous (IV) Therapy | ☐ Family Involvement Promotion |
| ☐ Transport: inter- and intra-hospital | ☐ Patient Rights Protection |
| ☐ Hypothermia Treatment | ☐ Anxiety Reduction |
| ☐ Phlebotomy: Arterial Blood Sample | ☐ Spiritual Support |
| ☐ Positioning | ☐ Calming Technique |
| ☐ Surgical Preparation | |
| ☐ Fall Prevention | |
| ☐ Cerebral Perfusion Promotion | |
| ☐ Environmental Risk Protection | |

| NOC Taxonomy - Nursing Outcomes with the body | NOC Taxonomy - Nursing Outcomes with family members |
|---|---|
| ☐1☐2☐3☐4☐5: Self-Care: Bathing/Hygiene | ☐1☐2☐3☐4☐5: Psychosocial Adjustment: Life Change |
| ☐1☐2☐3☐4☐5: Fall Prevention Behavior | ☐1☐2☐3☐4☐5: Caregiver Emotional Health |
| ☐1☐2☐3☐4☐5: Risk Control | ☐1☐2☐3☐4☐5: Adherence Behavior |
| ☐1☐2☐3☐4☐5: Risk Control: Hyperthermia | ☐1☐2☐3☐4☐5: Communication |
| ☐1☐2☐3☐4☐5: Risk Control: Infectious Process | ☐1☐2☐3☐4☐5: Knowledge: Disease Process |
| ☐1☐2☐3☐4☐5: Body Mechanics Performance | ☐1☐2☐3☐4☐5: Knowledge: Health Resources |
| ☐1☐2☐3☐4☐5: Role Performance | ☐1☐2☐3☐4☐5: Risk Control: Infectious Process |
| ☐1☐2☐3☐4☐5: Transfer Performance | ☐1☐2☐3☐4☐5: Health Beliefs |
| ☐1☐2☐3☐4☐5: Risk Detection | ☐1☐2☐3☐4☐5: Nutritional Status: Biochemical Measures |
| ☐1☐2☐3☐4☐5: Cardiac Pump Effectiveness | ☐1☐2☐3☐4☐5: Family Coping |
| ☐1☐2☐3☐4☐5: Electrolyte & Acid/Base Balance | ☐1☐2☐3☐4☐5: Social Involvement |
| ☐1☐2☐3☐4☐5: Fluid Balance & Acid/Base Balance | ☐1☐2☐3☐4☐5: Comfort Status: Psychospiritual |
| ☐1☐2☐3☐4☐5: Circulation Status | ☐1☐2☐3☐4☐5: Family Health Status |
| ☐1☐2☐3☐4☐5: Neurological Status | ☐1☐2☐3☐4☐5: Family Functioning |
| ☐1☐2☐3☐4☐5: Nutritional Status: Biochemical Measures | ☐1☐2☐3☐4☐5: Suffering Severity |
| ☐1☐2☐3☐4☐5: Respiratory Status: Ventilation | ☐1☐2☐3☐4☐5: Motivation |
| ☐1☐2☐3☐4☐5: Family Functioning | ☐1☐2☐3☐4☐5: Pain Level |
| ☐1☐2☐3☐4☐5: Hydration | ☐1☐2☐3☐4☐5: Stress Level |
| ☐1☐2☐3☐4☐5: Self-Care: Dressing | ☐1☐2☐3☐4☐5: Family Normalization |
| ☐1☐2☐3☐4☐5: Comfortable Death | ☐1☐2☐3☐4☐5: Family Participation in Professional Care |
| ☐1☐2☐3☐4☐5: Falls Occurrence | ☐1☐2☐3☐4☐5: Information Processing |
| ☐1☐2☐3☐4☐5: Aspiration Prevention | ☐1☐2☐3☐4☐5: Client Satisfaction: Cultural Needs Fulfillment |
| ☐1☐2☐3☐4☐5: Dignified Life Closure | ☐1☐2☐3☐4☐5: Client Satisfaction: Protection of Rights |
| ☐1☐2☐3☐4☐5: Thermoregulation | ☐1☐2☐3☐4☐5: Dignified Life Closure |
| | ☐1☐2☐3☐4☐5: Decision-Making |

Date: | Name and signature: | Stamp

**Figure 3 -** List of interventions and outcomes, according to NIC and NOC, designed for situations of organ procurement and body preservation, Juiz de Fora-MG, Brazil, March 2011.

Source: Instrument developed by Arreguy-Sena, Ferreira e Alves, 2011

Given that the process of organ and tissue procurement occurs in a short time, we did not add any more columns to the layout of the three instruments presented (Figures 1-3).

The presentation of nursing interventions within the body donor-family binomial kept the standardization of dimensions approached. The completion of interventions and indicators through checklist was designed in order to improve the time spent on their completion, either manually or electronically.

## FINAL CONSIDERATIONS

The fact that the theoretical model applied to the issue of organs and tissues procurement contemplates death as a component of activities of daily living favored its implementation in a model of nursing care consistent with the issue. The use of NANDA, NIC and NOC taxonomies was proved pertinent to the extent that it aligned the stages of diagnoses, interventions, outcomes, and assessment, enabling their analysis in different realities.

The development of instruments (for data collection and nursing assessment, diagnosis, intervention, and outcomes) reconciled theoretical (legislation on organs and tissues procurement), methodological and legal (Resolution 358/2009), philosophical like the Activities of Living Model, technical content (policy and technical guidelines for organs and tissues procurement and donation) and language standardization for nursing diagnosis, interventions, and outcomes (NANDA, NIC and NOC taxonomies). These components were combined in order to instrument nurses in the care for the body and in the process of organ procurement along with relatives.

This enables a proposal of Systematization of Nursing Care (sequence of interconnected steps) to approach the process of organ procurement and transplantation within a theoretical-philosophical and methodological Nursing framework (nursing process).

It is worth mentioning that this proposal subsidizes nurses' performance based on scientific knowledge and on a multidisciplinary context, which directly contributes to the concept of nursing as an emancipated profession and as a discipline that approaches specific concepts and values. It consolidates the identity of nursing as a profession, once this proposal favors the control of work itself, creating positive impacts for society and for the field of nursing.

It is recommended to validate the instruments by field experts (content validation) and in clinical practice (clinical validation) in order to adapt them to the reality and specificity of each institution where they are implemented.

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