



## RESEARCH

## ECOSYSTEM APPROACH IN INTENSIVE CARE: NURSES KNOWLEDGE

ABORDAGEM ECOSISTÊMICA EM TERAPIA INTENSIVA: CONHECIMENTO DOS ENFERMEIROS

ENFOQUE ECOSISTÊMICO EN TERAPIA INTENSIVA: CONOCIMIENTO DE LOS ENFERMEROS

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## ABSTRACT

**Objective:** This study aimed to identify the nurses' knowledge about the ecosystem approach in the Intensive Therapy Unit (ITU). **Method:** Characterized as a descriptive-exploratory research, with a qualitative approach. The subjects were three nurses who worked more than one year in this space in Santa Maria, RS. The data was collected in August and September 2011. We used thematic analysis to examine the research findings. **Results:** In the categorization two themes emerged: Ecosystem Approach in the Intensive Therapy Unit and Intensive Therapy Unit as a healthy and sustainable environment. It was emphasized that the knowledge-based ecosystem paradigm enables the understanding of complex space activities of the ITU through the interactions of its constituents. **Conclusion:** Thus, a systemic view, when considering the multiple dimensions of the integral elements of that space / environment and their interactions, it is appropriate to enhance the dynamics of the constant changes in this workspace. **Descriptors:** Nursing, Work environment, Ecosystem, Health.

## RESUMO

**Objetivo:** O estudo objetivou identificar o conhecimento dos enfermeiros acerca da abordagem ecossistêmica em Unidade de Terapia Intensiva (UTI). **Métodos:** Caracterizou-se como pesquisa de caráter descritivo-exploratório de abordagem qualitativa. Os sujeitos foram três enfermeiros que atuavam a mais de um ano nesse espaço em Santa Maria, RS. A coleta ocorreu em agosto e setembro de 2011. Utilizou-se a análise temática para examinar os achados da pesquisa. **Resultados:** Na categorização emergiram duas temáticas: Abordagem Ecossistêmica em Unidade de Terapia Intensiva e Unidade de Terapia Intensiva como ambiente saudável e sustentável. Destacou-se que o conhecimento com base no paradigma ecossistêmico possibilita a compreensão das complexas atividades do espaço da UTI por meio das interações dos seus elementos constituintes. **Conclusão:** Assim, a visão sistêmica, ao considerar as múltiplas dimensões dos elementos integrantes desse espaço/ambiente e suas interações, é apropriada para potencializar a dinamicidade das constantes mudanças nesse espaço de trabalho. **Descritores:** Enfermagem, Ambiente de trabalho, Ecossistema, Saúde.

## RESUMEN

**Objetivo:** El estudio tuvo por objetivo identificar el conocimiento de los enfermeros acerca del abordaje ecossistémico en la Unidad de Terapia Intensiva (UTI). **Método:** Se efectuó como investigación de carácter descriptivo-exploratorio de abordaje cualitativo. Los sujetos fueron tres enfermeros que actuaban más de un año en ese espacio en Santa Maria, RS. La recolección ocurrió en agosto y septiembre del 2011. Se utilizó el análisis temático para examinar las informaciones de la investigación. **Resultados:** En la categorización emergieron dos temáticas: Abordaje Ecossistémico en Unidad de Terapia Intensiva y Unidad de Terapia Intensiva como espacio saludable y sustentable. Se destacó que el conocimiento con base en el molde ecossistémico posibilita la comprensión de las complejas actividades del espacio de la UTI por medio de las interacciones de sus elementos constituyentes. **Conclusión:** Así, la visión sistémica, al considerar las múltiples dimensiones de los elementos integrantes de ese espacio/ambiente y sus interacciones, es apropiada para potencializar la dinamicidad de las constantes mudanzas en ese espacio de trabajo. **Descriptor:** Enfermería, Ambiente de trabajo, Ecossistema, Salud.

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## INTRODUCTION

The environment of care has very close relationship with humans and objects. It has features such as the synthesis of affinities between subjects, feelings, objects, actions, moments, facts and circumstances. To these characteristics, sum up the individual dimension of the user / client and family who experiences a process of adaptation and damage to physical, emotional and social.<sup>1</sup>

The intensive care units (ICUs) units are arranged so as to provide specialized assistance to users / customers in critical and life-threatening, requiring control and medical and nursing uninterrupted. Given these facts, justified the introduction of improved processes increasingly seeking, through advanced technologies, preserve and maintain the life of the human being using therapeutic and more effective controls, which requires training of health professionals and skill.<sup>2</sup>

According to most studies that link aspects regarding the ICU unit of the environment is one of the most aggressive and tense of a hospital, where death is a constant, professionals should, always be alert to the complications that can arise from unexpectedly. In this space that should be of serenity, silence, privacy and deep respect for human beings, are also highlighted negative issues as: sleep deprivation, excessive noise, invasion of privacy, large influx of professionals, the near exclusion of the family in the care process , little communication and numerous cables, wires and monitors.<sup>3</sup>

The authors point out that the biomedical area to look at ever smaller parts of the body subject, often loses sight of the individual as a human being, especially in the Intensive Care Unit (ICU), which is a local complex and characterized as an environment permeated of the latest technology.<sup>4</sup>

Nursing care happens in this troubled environment stereos and thus it is necessary for nurses to develop methods to grasp reality in a new approach. In this work, the ecosystem in order to overcome the barriers between the user/client, environment/health - as the conventional approach, Cartesian, linear and fragmented - not cope effectively with most problems arising in the ICU setting.

The ecosystem approach is related to the practical implications of thinking about systems. It is based on the concept that investment should include a conjugate of knowledge, technical procedures, skills, behaviors and attitudes in which professionals must recognize the importance of chains of relations with nature, society and man.<sup>5-6</sup>

In this space, it is essential to enable actions that include the environment in a pluralistic perspective with the possibility of promoting the construction of the image of belonging to all the elements that are part of the whole ICU. In this sense, there has been multiple equipment with advanced technology that is available to ensure a fast and efficient user/customer. However, this apparatus of technological resources do not replace the interactive relationships that should be used to motivate and encourage the user/customer care to participate. Thus, it is argued that we must transform knowledge into systemic, which only occurs if there is a change of analytical thinking to contextual, systemic and environmental.<sup>7</sup>

It is important that nursing, in conjunction with other workers who work in the ICU, has a new way of thinking and acting on health. With this, you can meet the health needs of numerous clients in this space permeated with technological resources, making it a more healthy and sustainable living weaving a web of relationships.<sup>8-</sup>

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Inserted in a multidisciplinary team acting in a hospital, nursing need to be aware that this space/environment consists of various physical and social elements, which are interdependent and interrelated. Added to this, the interactive relationships with the customer/user, with the very professional and multidisciplinary team should be of utmost importance, as they are forming networks and are in constant interaction.<sup>9</sup> So, the question is: what is the nurses' knowledge about the ecosystem approach in the Intensive Care Unit?

Articulated that health is entirely related to the environment and forms of social organization, as well as the interrelationship between the different ecosystems that constitute the entire planetary system, currently interacting in a globalized form. Moreover, it is necessary to view the overcoming of tradition hygienist and social healing by assignment of the disease. Health seems to be operating under a superstructure resulting from a socio-economic basis, the subject's relation to the world, beliefs, values and development patterns.<sup>9</sup>

In this approach, the study may contribute to increasing ecosystem approach, especially in critical intensive care environment, with the possibility of changes in the pointing direction of healthier and more sustainable actions that location. Thus, we must abandon the idea of fragmented care and disease humans look holistically including the biological, social-cultural, psychological and spiritual in order to promote health with their participation. This way of producing health involves the human being as an agent of this process and it restores autonomy to interact with elements that are offered in the ICU for recovery.

Under this view, this study aims to identify the nurses' knowledge about the ecosystem approach in the Intensive Care Unit.

## METHODOLOGY

Descriptive exploratory qualitative approach, which is characterized by progressive systematization of information to the logical understanding of the object under study, and is also used in the preparation of new quality indicators.<sup>10</sup>

For the study setting, we opted for a small hospital, private network, more specifically in an ICU, located in the municipality of Santa Maria/RS.

As subjects of the study were selected nurses of both sexes who work in the ICU of the hospital. As inclusion criteria, casted up the nurses working in the ICU of this institution and accepted spontaneously participate in the work. We excluded nurses who were on vacation, attestation or who were temporarily away from the institution as well as those who refused to be interviewed.

Initially, a letter was sent to the coordination of the hospital where the study was conducted, requesting permission to carry out the research.

The development work was in accordance with Resolution 196/96 of the National Health Council of the Ministry of Health<sup>11</sup>, which discusses the guidelines and rules for research involving humans. The project was approved by the Ethics in Research with Humans of Franciscan University Center (UNIFRA) under number 133.2011.2 opinion and by the National Research Ethics - CONEP under the number 1246. It is noteworthy that were observed all rights of nurses, providing them with the freedom to refuse to participate or withdraw consent during labor.

Ensured the anonymity of participants who were identified by the letter E, nurse followed by an Arabic numeral in the order occurred with the interviews.

Data collection was conducted during August and September 2011, using a semi-directed, using an instrument developed specifically for this purpose, which allowed the researchers to collect data through relevant elements, provided by six essay questions. As an observer, has shown interest for the same and admitted subject to further stimulate the subject.

The collected data were subjected to thematic analysis following the steps indicated by Minayo (2010), being scrutinized to identify the units of record. The analysis allowed to organize and group elements and ideas and expressions that were related to each other around a central concept. Thus, these units were grouped yielding two themes: Ecosystem approach in Intensive Care and Intensive Care Unit as a healthy and sustainable environment, which will be presented and discussed below.

## DISCUSSION AND RESULTS

The process of data analysis allowed the presentation of data in two main categories: Ecosystem approach in intensive care: the intensive care unit as a healthy and sustainable environment.

### Ecosystem approach in Intensive Therapy

The ecosystem approach to health proposes an understanding of the complex interactions between the various components of a whole and how these interactions affect the health and well-being of human populations. It also seeks to identify strategies and performance management professional, if the nurse in promoting health, healthy conditions of life and sustainability of the ecosystem on which the human being lives, produces and develops. Thus, there is a holistic conception of the same, emphasizing hemultidimensionality of various human factors, in the context ecosystem.<sup>12</sup>

The General Theory of Dynamical Systems provides the principles that allow us to observe that the world is united to everything and everybody is not a static system and closed itself and the outside world, but presents itself in a process of exchange between all its structuring elements. Each component of the system is interrelated, interdependent, and has influenced the other elements, so it changes, adapts and transforms continuously.<sup>13</sup>

The dynamic system is built structures that form a complex whole and unified, with which constituent components are interrelated and represent the organization system. The organization consists of more than interrelationships objects in the system itself, so the structure is invisible, has no need to be viewed, but to understand its importance.<sup>13</sup>

Thus, all parts of a systemic conjugated specific arrangement must be present to ensure the efficient and achieve your purpose.

The nurses when questioned about their knowledge about the ecosystem they understood by ICU were expressed at reports:

It's a pleasant environment for everyone, with little noise (noise), with close attention to the patients, are used sustainable techniques (the environment in mind) (E1).

Denotes that E1 has a superficial understanding about the ecosystem in the ICU, because it demonstrates some sustainable features that this space should present, but not emphasized in a systemic way.

This is viewed as thinking systemically means adopting sustainable procedures, it is an opportunity to cultivate the possibilities that space itself provides and thus, examine the relationships that exist between the components of the ICU. The nurse has to care based on individual and collective sphere and as an object of study humans therefore need to establish

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relationships with individuals within philosophical, ethical, political, social, technical, economic and spiritual, in support of guarantee assistance qualified and appropriately<sup>(14)</sup>. This breadth of care, signals a holistic view that materializes as it overcomes the biomedical model still prevails for much of the professional health care. However, most professionals who work in hospitals know or does not use the experiences gained from diversity to enrich their knowledge in finding innovative solutions.<sup>15</sup>

Soon, the ecosystem approach, it becomes necessary to consider the space as a social dynamic, with a diversity of interrelated elements, as can apprehend in the statements below:

It is the relationship between the environment and the hospital environment (E2).

Believe it is an environment that provides a balance between human and natural functions, i.e. the environment as a whole within its functions (E3).

It can be seen in the speeches of E2 and E3 that the ICU under systemic conception is seen as a dynamic social system, through which relations is opportune perform processes seamlessly.

Thus, the human being is able to establish relationships and dynamic space, since the environment is revealed with the meaning of relationships between human beings. This understanding of the approaches towards a social-physical space, establishing between the team and the physical environment and social relations of practical action in a single unit of work and specific, promoting the balance of the system.<sup>7,8,13,14,15</sup>

From this perspective, it is pointed out that nothing can be conceived in isolation, since everything is part of a system and is interconnected, interdependent and interrelated. However, one must learn to think systemically, R. pesq.: cuid. fundam. online 2013. abr./jun. 5(2):3645-53

promoting systemic thinking through relationships, patterns and context<sup>8</sup>, i.e., introducing the concept of processes.

Consequently, the nurse inserted in a multidisciplinary team within a hospital unit, need to be aware that this space / environment consists of various physical and social elements, which are interdependent, interrelated and influence each other. Thus, relationships are extremely important because they are forming networks and are in constant interaction.<sup>9</sup>

### **Intensive Care Unit as a healthy and sustainable environment**

Nurses to perform their professional practice in the complex space of the ICU in a multidimensional perspective, integrated and interconnected, must transcend the performance pyramid and using an ecosystem approach, because this paradigm enables caring human being. Thus, the professional interactive relationships with people, groups, institutions, environment, have the ability to build new knowledge and strategies.<sup>15</sup>

However, discussing the healthy and sustainable environment in a systematic conception, is designing the worker as well as his performance in space and interrelationships that establishes the institution<sup>9,14</sup>, resulting in an integrated environment where multidisciplinary team must constantly produce health, as can be seen in the speeches below:

Comfortable, nice (visually, lower noise, lower the brightness, pleasant odor, use only the necessary materials, water, light, for their activities, maintain the equipment) (E2).

An environment compatible with the quality of service and directed to all dimensions of the human being (E3).

The sustainable environment, and economic power and not wasted, as principles



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have the satisfaction of human needs and interdependence in order to implement processes in an integrated manner, making the organization more dynamic through their social relationships, flexibility, innovation, creativity and competence. Thus, the nurse contributes in countless ways in the process of organizing, optimizing sustainability and dynamics of space. As promotes sustainable environment makes it through healthy relationships, nurture and stimulate the experience of that environment in order to present themselves harmonious and healthy, given the multidimensionality of human well-being care as caregiver.

In this conception, it is possible to emphasize that the ecosystem theory resonates so fruitful in the performance of nurses in health production, as it strengthens the networks and work in multidisciplinary teams, for sustainability of the systems. In this configuration, it is possible to integrate the knowledge and the political, social, economic and cultural rights in order to live in a healthy environment and proper, as the ICU through the man-nature relationship, based on knowledge.<sup>16</sup>

Health workers, through knowledge, to adopt the ecosystem approach in the ICU, they put themselves in that space and try to modify it, since it is known that these units in most hospitals, get users / clients to the gravity pathology and the remoteness of the family environment, are subject to numerous rules and routines, creating imbalance. In this sense, the unrest may be improved by using the ecosystem approach in nursing care, because it has in its principles the ability to bring all the elements that comprise it, health and the environment through science and technology, nurtured by a comprehensive care / holistic and not only welfare and technician focusing only on the disease.

Nurses in the ICU, to propose an ecosystem approach in the workplace, provides a relational view interactive effect with the customer / user in this space to which it belongs right now. However, both should respect their belonging to society, viewing it in context. Thus, we must recognize its uniqueness,<sup>5</sup> respecting its multidimensionality and their needs as human beings, as can be seen in the speech of the subject E3:

An environment compatible with the quality of the service, and directed to all dimensions of the human being (E3).

The quality of nursing care in an ICU underlies on knowledge, competence, skills and attitudes of nurses, promoting a dynamic process that may allow a multidisciplinary team with a trust relationship for the safety of the user / client and family. The process makes it possible for individuals verbalize their feelings related to their needs and move on to participate in the recovery of your health, because this way of working promotes a focus on the uniqueness of the user / client demand and healthy living in this environment.<sup>17</sup>

Please note that there is relevant to community cohesion, since it is comprised of individuals who have their own uniqueness, with a constructive capacity to transform the space according to the needs to meet a healthy way of living, meeting the poverties of health of users / customers. Therefore, nurses must care for the patient encompassing family background, values, culture and aspirations of each individual, valuing their needs, expectations and beliefs of their own, an effective and harmonious.<sup>17</sup>

Therefore, health professionals should resize its practices and relationships with their clientele, within intensive care, with responsibility for effecting the relationship of individuals and societies. This scaling can arise a

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new watch, where the relationship between health professional and user / client initiates an interactive relationship, whose main purpose is to make you understand the nature, the meaning of illness, encourage him to participate in their care and show you the possibility of changing the type of life that led to the disease.<sup>5</sup>

The subject E1, when asked why the relations produced in the ecosystem are important hospital under intensive care, pointing expresses the relationships and the benefits from this practice:

*Relationships are very important for bringing benefits to patients the ICU environment (E1).*

Perceive themselves in this speech, the various therapies that nurses use on groomed as well as demonstrations and the interdependence of biological, physical, mental and emotional human body. However, the space / environment of the physical components of the ICU should be understood as an aid immediately effective care nursing as their interdependence directly affects the relationship of the result to be achieved. However, no waiver and does not replace the interactive relationship that should exist between those who care and who care.

The strategy of adopting sustainable techniques such as waste handling, proper waste segregation, sensor faucets, lighting technologies with graduation, enjoy the natural light used strategically by nurses as part of their performance, using maneuvers with the correct equipment to improve its durability, cleaning and conservation of the elements that constitute and are in this space, are part and are indispensable for the proper functioning of the ICU. All these measures aim to promote harmony between humans and nature and, consequently, between humanity and generating the care, not wasteful, providing durability, namely sustainability.

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Therefore, the behavior of every living member of the ecosystem depends on the behavior of all. The success of the community depends on the success of each of its members, while the success of each member depends on the success of the community, because each influences and is influenced simultaneously.

However, it is clear that sustainability requires a new way of thinking to promote a new way of producing. The production of goods and services for the benefit of human beings must take into account that it is necessary to do it without causing damage to humans or space inserted in artifice and indirectly to the community. It must be consistent with meeting the needs of the individual and to provide support for the promotion of improvements in standards of human health, enhancing the experience each moment, both individually and collectively.

Thus the magnificent feature of the medium is its inherent ability to sustain life, reaffirming that a healthy and sustainable human community must be designed so that its life forms, physical structures, technologies and their various sociocultural relationships do not interfere with the intrinsic capacity nature to sustain its existence. Thus, it is possible to build healthy and sustainable environments, having the principal organization that ecosystems have developed to maintain and develop the web of life. However, preciput is aware that the goods and services offered for free by the ecosystem are finite and exhaustible. Its use must be rational, logical framework for the benefit planetarium. Each space ecosystem, no matter how small, has an important and necessary function to assist in the sustainability of the planet.

In this sense, there is relevance to exploit the potential of the nurse of the hospital environment, specifically in the ICU, transforming this complex atmosphere in a harmonious and healthy place, establishing the inter-relationships

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and building networks in search of true sustainability.<sup>4</sup>

This device assists in planning and apprehension of reality, subsidized by a system of interdependent links of character and dynamic, strengthening relationships and interactions to accomplish sustainability through the actions of nurses in a place that is sometimes feared by users / customers.<sup>15</sup>

In this context, the health worker entered the labor process, performs many activities to meet the health needs of the users / customers which together comprise the comprehensive assistance to individuals, making healthy and harmonious environment through human relationships.<sup>19</sup>

It is relevant to analyze the environment, view it in the context of the totality of elements that compose it, not forgetting that everything is in close relation to the environment and people change and they will change, causing mutual influences. The interrelationship establishes that the person with the hospital system, specifically the ICU, is the perception that she has this space. Thus, it is noteworthy that the ratio of professionals, linked to knowledge, nurture / interdependent environments strengthens the favorable dynamics and can help to be healthy and sustainable. Through this construct, it is understood that the way that people relate to the environment are aspects that contribute and nurture act in the environment and can even transform it according to your needs.<sup>19</sup>

## CONCLUSION

In discussing the hospital ICU in an attempt to understand this context there is clearly a need to refer to the inter-relationships in this space with the ecosystem approach.

The multiple complications arising from the risk and severity of morbidity of users / clients

admitted, become indispensable by nurses conduct interactive dynamic between its components, i.e., an interaction between the variables that make up this space and not conduct with his mechanics feedback mechanisms, imposing and impersonal deterministic.

The nurse, imbued with one of its major professional tools, knowledge, needs to promote health in the ICU environment permeated the-art technological resources and provide the means to make it a healthy and sustainable space.

In this sense, the ecosystem approach to human health aims to develop new perspectives on the relationship of human health and the environment, allowing appropriate action and all healthy individuals. Therefore, in this context, health is presented as a positive affirmation and not simply as a denial of the disease and is intrinsically linked to the quality of life in an environment able to offer individuals a continuous and comprehensive care. She transcends the pyramidal model of care, because the ecosystem approach is based on principles such as relationships, interdependence, interaction, mutual influence, and process, healthy and sustainable environment.

Through these reflections, we found that the anchoring of the ICU environment on ecosystem approach becomes an aid to bring about significant changes for people who need to intern in this space. The main practical implications arising when thinking about implementing the ecosystem approach within the ICU, shows that investing only in a set of next-generation technology resources, procedures and skills is insufficient to assist humans in their uniqueness. It is emphasized that the scope of this new paradigm, applied to ICU services, relies on the interactive relationship between the nurse and the user / customer, making it more participatory in their own health. It is the nurse to apply their knowledge on the use of the



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equipment, i.e. the technological resources and not forget that they are just resources that help to provide a more efficient nursing care. Therefore, it cannot evade the point of excellence of their profession that is interactive relational care.

Finally, it is important nurses identify the specific environmental highlighting the need to establish links in a wider sense of social and cultural interrelations.

At this juncture, further studies are essential to deepen this knowledge, mobilize nurses and other health professionals to examine the ecosystem paradigm and verify their potential in boosting the constant changes necessary for a healthy and sustainable living space in the ICU.

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