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THE COMPLEXITY OF THE HEALTH CARE NETWORK

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ABSTRACT
This article is a documentary study involving a social and historical approach with the objective of analyze the composition and the structure of the nursing workforce in the Hospital Alemão Oswaldo Cruz, between the year of 1941 and 1945. It was appreciated two documentary sources: "Book of Employee's Register" and "Professional Sheets" from HAOC. Before being correlated, the data from each source were studied separately. The data from each book was copied electrostatically, certificated, transcript, organized into Excel® spreadsheet, and then analyzed quantitatively and qualitatively in the historical, social, economic and political context. The research revealed that since the 1940s, the institution was using human resource management tools to control headcount and payroll. There was formal and hierarchical division of labor. The nursing workforce was composed by 16 different designations of positions that was divided into three segments (leaders, graduates, non-graduates) acting in strategic, tactical and operational levels. It was concluded the organization of nursing professionals, supported by the care and management model, enabled HAOC to be considered a model institution-reference.

Keywords: Delivery of health care. Health services accessibility. Health management. Philosophy, nursing. Thinking.

INTRODUCTION

The actions in the Unified Health System (SUS) in Brazil are structured to deal with the demands, using as a gateway, the basic health care units. However, the population still faces difficulties on accessing both, conventional health units and the units of the Family Health Strategy (ESF). This shows that none of the two models can properly assist its users[1]. That is, even coverage having increased in recent decades, especially in the outpatient clinic, the supply of resources remains insufficient to meet the population needs[2].

To meditate on the above mentioned, it is necessary to understand the concepts of Health Care Network (RAS) and its complexity. RAS are considered an important factor for rationalization of spending and better use of the available assistance supply[2] and a system that seeks, deliberately, in terms of its institutions, to deepen and settle stable patterns of interrelations, settled in three elements: the people, the operational structure and the health care model[3].

It is worth pointing that at the national level, the RAS creation has been intensely debated by the Brazilian Ministry of Health, with emphasis mainly on Primary Health Care (ABS). In this direction there is a ministry decree[4] laying down guidelines for the organization of RAS from the SUS that, although it has not changed the reality, it was an important step in the implementation of policies that might transform the SUS fragmentation scenario, influencing and acting on all levels of management[5] .

Therefore, the effectiveness of RAS in Brazil still presents a challenge to be faced by users, workers and managers, since the assistance is not focused on the whole articulated and interdependent SUS[6]. Health care workers live with a complex health system, which has services with routines and bureaucratic rules that

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hinder the dynamic and integrated movement of the care in health proclaimed by the RAS[7].

It is known that the pursuance for integration in health care is not an easy task, especially for the working dynamics of this complex system, covering different levels of care (primary, secondary and tertiary), diversified sources of funding, professionals from several backgrounds and specialties, structural disparities and technological resources, as well as the variety of the user community[6,7].

In this system set up, it is possible to consider that the complexity is present in the RAS theme, both in relation to aspects of technological and management complexity, as in regard to its constituent elements.

In Brazil there is no robust ratings on this topic, however, the actual establishment of these networks can improve the quality of services, health outcomes and user satisfaction, further helping to reduce the costs of health care systems[3]. Studies linking the matters of complexity and RAS are scarce, noting that the RAS cannot be viewed in a divided way, but as a complex movement in which all the services that constitute the SUS frame the whole, and in each one of them there is an interrelation formed by many parts[7].

With this sense, it is proposed a theoretical and philosophical reflection on the inter-relationship between the constituent elements of RAS in this complex service network, taking as a guide the complex thought of Edgar Morin, knowing that in a perspective of complex thinking, it is necessary to enhance the relationships between each phenomenon and its context, that is, how a local modification affects the whole and how a modification in whole rebounds on the parties[8].

Edgard Morin presents a set of seven principles, which constitutes a guide for a complex thinking[8]. These principles serve as a point of reflection and discussion (method) in relation to the components of the RAS.

Systemic or organizational links the knowledge of the parties to the attention of the whole. *Hologramic* highlights this deeming paradox of complex organizations, in which not only the part is in the whole, as the whole is inscribed in the part. *Retroactive circuit* allows the knowledge of self-regulatory processes. *Recursive circuit* goes beyond the notion of regulation with the self-production and self-organization. *Autonomy/dependence (self-organization)*: living things are self-organizing beings that need to be designed as self-eco organizer beings. *Dialogic* links two principles or notions that should exclude each other, but are inseparable in the same reality. *Reintroduction of knowledge in all knowledge* operates the restoration of the subject and reveals the central cognitive problem. All knowledge is a reconstruction/translation by a mind/brain in a certain culture and period of time[8].

The purpose of this reflection is, therefore, to pursue a possible preview of the existence of dialogues that can occur within/between the various actors who are part of the RAS, perceiving them as if it constituted in a system formed by combining different agents/elements, among them, the nursing.

RESULTS AND DISCUSSION

The health care network elements: actors/scenarios

The first constituent of the RAS, **the population**, is seen as essential and seen as the reason for its existence. The RAS in a public system such as SUS requires the social construction of territories/population since this population is responsibility of the RAS, lives in peculiar health territories and it is socially organized in families, being registered and logged in subpopulations by its sociosanitary risks[3].

Because it is responsibility of a RAS, the population must be fully known and registered in information systems[3]. From the moment they feel integrated in health care, in a focused attention on the family, it positively recognizes health, adopting preventive measures recognizing itself as the subject of their health, adopting just as much the self-care practices[9].

The population, as an essential element of the RAS, suits the *Principle of reintroduction of knowledge in all knowledge*. In the framing of the RAS, it is the ABS's responsibility to

articulate with the population, being this factor of great importance in the knowledge and in the public relationship process of the health team by introducing the active participation of the subject in the process of knowledge and self-knowledge.

The population can also be seen in the *Systemic or organizational principle*. The existence of networks is the result of other factors related to the higher complexity of administrative processes in an environment whose dynamic precludes any single actor to control the processes of change, which in this case is presented via popular participation or greatly, via fellow citizen.

It is noticed that society is present in every individual, as a total, through its language, its culture, its rules[8]. So here is the presence of *Hologramic principle*. In the use of this principle, it is possible to approach the understanding that the whole contains information about its parts, but that it also has the information of the whole. In the case of the RAS, the population contributes to their culture, their beliefs and values so that everyone sees themselves represented in it, and likewise, end up incorporating features of the whole to the network.

The second element that constitutes the RAS is the **operational structure**, which, in turn, is made up of five components: **the communication center of health care networks; the points of secondary and tertiary health care; support systems; logistics systems; and network governance system**[3].

Therefore, and in this configuration, the second element may be related to the *Principle of autonomy/dependence (self-organization)*, with respect to the intricate internal relationships and non-hierarchical form which supports this type of cooperative organization and giving it dynamicity averse to balance, providing self-organization.

This relationship is made at the time they are presented the five components of this second element, since there is no autonomy without reliance on a relationship where the higher the autonomy, the greater the dependency, requiring the creation of operational structures which supply and are supplied by the system itself, in a relationship of interdependence within their own organization. The component *communication centre of care networks* presents itself as the node exchanger, which coordinate the flow and counterflow system. This component, without communication, presents itself, therefore, no flow nor counterflow.

The component ***points of secondary and tertiary care*** emphasizes the roles to be played by clinics and hospitals. This component, since no interaction, flow or communication to each other and to other members of the network, affects the population element, which is the focus of the attention offered.

The component ***systems support***, established by the diagnostic and therapeutic support, pharmaceutical care and health information, serves to support the others and, depending on the interconnections in some cases, it represents the entire network. However, once not performed its role, it loses its meaning and function, resulting in: no supporting/unsupported; without sustain/no sustentation in the network.

The component ***logistics system*** operates in health transport system and has also, for its operating line, the health care to the regulated access systems (SUS Card). Once without logistics/without identification, meaning without access, that is, without its effective functioning, people's access to services becomes compromised.

The component of ***networks governance system***, discussed in terms of its institutions, of its management and financing system it is possible to view the *Principle of retroactive circuit*. When related to the self-regulating processes, it approaches the stabilization of the system by reducing the deviation or causing a larger reaction of opposite effect[10].

The reflection leads to the conclusion that, in an operating structure that aims caring the first constitutive element of the RAS, the population as well as its own existence as who is assisted and is also part of the group that provides assistance, organizes and manages (assistance to the population and the operational structure), can also be viewed on another principle. This, being the *Principle of recursive circuit*, which is constituted by a generator link, where products and effects are producers and causers of what produced them. As the pillars of RAS, the users, managers and

health professionals. These pillars are producers and at the same time product from the network[11].

The complexity found in the RAS, as to relating to the recursive circuit principle is presented in a form that network figure is used to designate systems, organizational structures or designs characterized by a variety of elements dispersed spatially or functionally, but remain linked to each other.

The third constitutive element of the RAS, which deals with **models of care to acute conditions and chronic health conditions**, is a logical system that organizes the functioning of the RAS, articulating, in a singular way, the relationship between the population and its subpopulations stratified by risks, the focus of the interventions of the health care system and the different types of sanitary interventions.

This third element, though, by definition, must obey the logic and organize the operation of the RAS, when dealing with the risk factors and social determinants as well as the demographic and epidemiological situation, can be seen from the perspective of the *principle of recursive circuit*. This reflexive intention is justified because it is a process in which the effects are at the same time causer and producer of the process itself and are manifested in the generation and death of beings, in biological life and human society[8]. Therefore, the social determinants of health become determinants of the model.

Besides this reflection, the model of health care, for organizing the functioning of the RAS, articulating, in a singular way, the relationship between the population and its subpopulations, refers to the *Principle of autonomy/dependence*, in which humans are self organizer beings, who develop their autonomy depending on its culture and societies[8]. This dialogue is presented in such a way that the structure and the positions of the actors in the RAS are able to influence their actions, preferences and interpretations according to their worldview, including the power resources.

In this sense, it is worth noting that the local management of health policy involves the formation of internal administrative skills related to essential aspects of common management of all public policies, as well as specific sector competencies of articulation with other State levels of government, civil society and market. Combination that requires the establishment of networks of articulation and interdependence with the private agents and other levels of government for the collective construction of SUS[12].

The legislation that regulates SUS, the Director Regionalization Plan (PDR) as a planning instrument of care regionalization process, does not recognize the user access according to the flow culturally established by the populations of neighboring municipalities[5]. However, the user decides on the route of access, possibly because the sociocultural and economic characteristics of the population contribute to the direction of flow searching health care assistance, showing that for an effective polarization, geographical and administrative aspects are not enough.

It is also considered that, there is in the SUS the conformation of a horizontal network of health care points of different technological densities and their support systems, where all health care points are equally important. Thus, polyarchic networks, where each node connects to several others, allowing to roam assorted paths between these nodes, so that many branches are interconnected[3].

To continue, thinking over the *Dialogic Principle* in the RAS, so that the actual dialogue is evident in living, independence and autonomy of its members, which are ordered in pursuit of common goals, allowing a dynamic just by installing a system with organizational synergy among involved ones.

In this dialogue, the RAS configuration is showed as not being a stratified arrangement between different actors[3], or the polycentric structure evoking network management approach, which requires different skills from those of hierarchical management[12]. Or, even the PDR based on the conformation of functional and resolute systems of health care assistance, through the organization of territories, through the conformation of hierarchical services networks, favoring the coexistence of autonomy, interdependence and

horizontal relationships (non-hierarchical) between the municipalities with the mediation and coordination of States and Union[5].

For healthcare professionals, especially nurses, which at the ESF coordinate and also organize the service and the health team[13], operating on the improvement of the work process[14], it is important to understand that the RAS establishes a system by combining different agents/components, because they constitute at the same time a unit, which would be the network as the organizational whole, and the multiplicity, represented by the agents/components that form the parts/part of the whole/one[8].

With this reasoning, it is possible to think and look assistance in different ways, viewing workers and users, accepting the uncertainties and contradictions present in care systems and thereby deal with the complexity of reality. It is considered a challenge to understand the nursing/health under this new watch[15].

The nurse takes commitment to health policies and the work in health care activities[16]. The complexity in the formation and work of nurses must be fed back continuously, in a dialogic and challenging process with a close look at the spectrum of social and health subjects[17].

This is an assertion based, mainly, on the complexity of nursing practice, because there is no guarantee of results since the nurses' working object are human beings with intelligence and free will[15].

CONSIDERATIONS

The accomplished considerations are inseparable in the reality that sets the RAS, especially on the order-disorder-interaction-organization, where the flow can be changed/reversed just by a movement of/among the three components of the RAS: the population the operational structure and the health care model.

In health services there is a multiplicity of networks operating in connections with each other in different directions and senses, building production lines of care/attention, which is configured in many lines and connections, in multiple directions. This gives the RAS this extraordinary chaotic feature, where all health care points are equally important and interconnected, allowing varied paths between the interconnections of this network, which are capable of causing problems/conflicts in integration and communication between the various levels of health care.

It is believed to be possible considering that the Complexity approaches the vision for the context in which the RAS are developed, which would allow the advance over the discussions on the participation of nursing in the process, because the RAS, for treating/caring for the greater fortune which is the human health are related to the society and its fullness.

This seems to be a key finding in the sense that the nurse is part of this process and to which should be prepared, getting as benefit the learning that occurs through the exchange of information, integration with various teams and experiences caused by participation in this process and the uncertainties learning.

A COMPLEXIDADE DA REDE DE ATENÇÃO À SAÚDE

RESUMO

Reflexão teórico-filosófica que objetivou buscar no pensamento complexo de Edgar Morin uma possível visualização da existência de interlocuções que podem ocorrer intra/entre os diversos atores que fazem parte da Rede de Atenção à Saúde, percebendo-as como constituindo um sistema formado pela combinação de diferentes agentes/elementos, entre os quais a enfermagem. Foram considerados como elementos constitutivos das Redes de Atenção à Saúde: população, estrutura operacional e modelo de atenção à saúde. Nesta reflexão foi possível perceber a indissociabilidade dentro da realidade que configura a Rede de Atenção à Saúde, principalmente, quanto à ordem-desordem-interação-organização, podendo o fluxo ser alterado/invertido, bastando para tanto um movimento de/entre os elementos que compõem a Rede. Para os profissionais de saúde, em especial o enfermeiro, torna-se de extrema importância perceber que as Redes de Atenção à Saúde constituem um sistema formado pela combinação de diferentes agentes/elementos. Acredita-se ser possível considerar que a Complexidade aproxima a visão para o contexto em que as Redes de Atenção à Saúde se desenvolvem, o que permitiria o avanço significativo quanto aos debates sobre a participação da enfermagem, por tratar/cuidar de um bem maior que é a saúde humana, em uma relação com a sociedade e sua completude.

Palavras-chave: Assistência à saúde. Acesso aos serviços de saúde. Gestão em saúde. Filosofia em enfermagem. Pensamento.

LA COMPLEJIDAD DE LA RED DE ATENCIÓN A LA SALUD

RESUMEN

Reflexión teórico-filosófica destinada a buscar, en el pensamiento complejo de Edgar Morin, una posible manera de visualizar la existencia de interlocuciones que pueden ocurrir inter/entre los diferentes actores que hacen parte de la Red de Atención a la Salud, en la percepción de ésta en cuanto sistema formado por la combinación de diferentes agentes/componentes, incluyendo la enfermería. Fueron considerados como elementos constitutivos de las Redes de Atención a la Salud: población, estructura operacional y modelo de atención a la salud. En esta reflexión se percibió la inseparabilidad dentro de la realidad que configura la Red de Atención a la Salud, sobre todo en relación a orden-desorden-interacción-organización, siendo posible que el flujo sea cambiado/invertido simplemente por un movimiento de/entre los elementos que componen la Red. Para los profesionales de salud, especialmente el enfermero, se vuelve importante tener en cuenta que las Redes de Atención a la Salud constituyen un sistema formado por la combinación de diferentes agentes/elementos. Se cree posible considerar que la Complejidad aproxima al contexto en el que se desarrollan las Redes, lo que permitiría la mejora significativa en cuanto a los debates acerca de la participación de enfermería, por tratar/ cuidar del bien mayor que es la salud humana, en una relación con la sociedad y su completitud.

Palabras clave: Prestación de atención de salud. Accesibilidad a los servicios de salud. Gestión en salud; Filosofía en enfermería. Pensamiento.

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