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Priya Reshma Aranha Ms

*Yenepoya Nursing College Managaluru, Karnataka, India*, priyaresh.menezes@gmail.com

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# Application of Rogers' system model in nursing care of a client with cerebrovascular accident

Priya Reshma Aranha\*

Email: priyaresh.menezes@gmail.com

## Abstract

Rogers' system model is commonly known as Science of Unitary Human Beings. It views human beings as integral with their environment. As per the concepts of the Rogers system model, nursing focuses on human beings and the manifestations that emerge from the mutual interaction of human and environmental field. It is said that the change in the pattern and organization of man and his environment is transmitted by waves; this pattern emerges as observable event in the life of man. Thus, better understanding of human experience is made possible. In this paper, the author has described the nursing care of a client with cerebrovascular accident based on Rogers' system model where the author has described how a client, who was initially diagnosed to have hypertension and diabetes leads a life, and then develops complications and how her life pattern changes. It shows how the client, in spite of frequent hospitalization, strives hard to move unidirectional towards maximum health within her limits.

**Key words:** Cerebrovascular accident, Helicy, nursing care, Rogers' system model, resonancy, unidirectional

## Introduction

Nursing is an art and science. Nurses use various theoretical models which guide them in practice. Therefore, nurses select and apply various theories to focus practice (Armstrong, Kelly 1995). Theories are said to be a set of interrelated concepts, ideas or feelings which explain some phenomena (George 2002). They give people an idea of how and why certain phenomena happen. Theories in nursing give information on definitions of nursing, goals as well as functions of nursing and also the principles that form the base for nursing practice. As nurses, it is very important to apply the theories in practice because they guide in providing day today nursing care to clients. Also, they provide a framework for practice and direct in the practical situations.

There are many categories of theories in nursing and 'systems theory' is one among them. It views the person

as a whole and not the sum of parts. Systems theory considers human beings as open systems and they constantly interact with the environment. Calista Roy, Emogen King, Dorothy E Johnson, Betty Newman are some of the theorists who developed and supported their views in systems theory and Martha Rogers is one among them.

Martha Rogers developed her model of unitary human beings based on the concepts of systems theory. Rogers viewed human being and his environment as integral that cannot be separated. She believed that human and his environment are a single unit and therefore, must be studied together. She also felt that human beings and their environment evolve, change, and move ahead together and after the change occurs, both humans and their environment cannot return to their former stage (George 2002).

Rogers's model is based on her assumption about the person and his interaction with the environment. She used energy fields, openness, pattern, and pan dimensionality as the building blocks to develop her

## Priya Reshma Aranha

Assistant Professor, Department of Child Health Nursing, Yenepoya Nursing College Managaluru, Karnataka, India

\*Corresponding Author

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model. She derived her concepts from the idea that the universe is an open system within which individuals and their environment interact independently and continuously (Tomey & Alligod 2006).

According to Rogers, 'energy fields' are the basic units of both living and non-living things. These energy fields provide guidance to perceive human being and environment as whole. She identified man and environment as the energy fields. The energy fields continuously vary in intensity, density, and extent. The second building block is 'openness' which says that the energy fields, i.e., human being and the environment are found to be constantly exchanging their energy. The energy flow between these two fields does not have any boundary that inhibits the flow of energy. The third building block is the 'pattern'. Rogers explains it as a distinguishing characteristic of an energy field. It is perceived as a single wave. Pattern is a character that gives identity to the field. The fourth building block is 'pan dimensionality' which is a non-linear domain, without any spatial or temporal attributes; its boundaries are imaginary and fluctuate constantly. ([http://currentnursing.com/nursing\\_theory/unitary\\_human\\_beings.html](http://currentnursing.com/nursing_theory/unitary_human_beings.html))

Rogers stated the principles of homeodynamics are based on the above building blocks. These principles help individuals to understand life and the mechanisms affecting life. They also provide knowledge on how to intervene and redirect the clients. The principles of homeodynamics are resonancy, helicy, and integrality.

According to Rogers, resonancy is the continuous change from the lower to higher frequency wave pattern in the energy fields. Human beings are perceived as wave patterns and a variety of life rhythms like sleep – wake rhythms, hormonal levels, and fluctuating emotional states can be linked to the wave patterns. The change occurring in these are from lower to higher frequency



Figure 1: Slinky toy, representing helicy

The slinky in Figure 1 represents that life process is continuous and it moves unidirectional from conception to birth in a non-linear plane. Slinky toy is a spiral which moves in a particular direction only. When the spirals are moulded they do not come back to its previous state. Similarly, the nature of human change is spiral like, continuously progressing towards increased diversity. Rogers says that human development is not static, and humans do not ever return to exactly the same place where they were before (Tomey & Alligod 2006). When the person follows the path along the Slinky, he may have spiralled to a place that is similar to where he was before but is just one circuit or turn on the Slinky from that original place. ([http://www.suidoo.com/Rogerian\\_Theory](http://www.suidoo.com/Rogerian_Theory))

The principle of integrality explains that there is a continuous and mutual process between human field and environmental field. This principle is divided into two i.e., reciprocity (wholeness, openness, continuous, and mutual interaction between human being and his environment) and synchrony (simultaneous change in human and environmental fields) e.g. the child playing in the sun on a bright summer day gets a sun burn. This is the process of interaction between sun and a child. However, the mutual process between the child and the sun occurs simultaneously, where he gets Vitamin D along with the ongoing effects of radiation (George 2002). This is the ongoing mutual process and is the nature of human beings and their environment.

Rogers explains the four paradigms in her model. They are human, environment, health, and nursing. She says that human is an irreducible, pan dimensional energy field that can be identified by pattern and manifesting characteristics and that are specific to the whole and they cannot be predicted from the parts. Rogers defines that the environment is in constant interaction with the human being. Each environmental field is specific to its given human field and both changes continuously and creatively. Rogers says that health is an activity in the life process which leads to the optimum fulfilment of a person's potential. Health is a rhythmic patterning of energy that is mutually enhancing and expresses full life potential. According to Rogers, nursing aims to promote symphonic interaction between the man and his environment thereby strengthen the coherence and integrity of the human beings and to direct and redirect patterns of interaction between the energy fields for

the realization of maximum health potential. ([http://www.en.wikipedia.org/wiki/Martha\\_E\\_Rogers](http://www.en.wikipedia.org/wiki/Martha_E_Rogers))

So here, the author during her clinical practice has tried to apply Rogers system model and on the basis of which nursing care was provided to Mrs Geetha (name changed) with the diagnosis Systemic hypertension (HTN), Diabetes Mellitus (DM), old CVA [Cerebrovascular accident (CVA)] and septicaemia.

**Case description**

Mrs Geetha, a 70 years old female, was admitted to the Intensive Care Unit (ICU) in an unresponsive state and was diagnosed to have septicaemia. She was a known case of hypertension and diabetes mellitus for seven years. She had right sided hemiplegia due to a stroke a year ago. She was on regular treatment. On admission, she was treated in the ICU for three days and then shifted to the general medical ward.

In the ICU she was drowsy, not able to verbalize her feelings. She stares blankly. Her face looked anxious.

She was fed through nasogastric tube, Foley’s catheter was draining urine, and bowel pattern was regular. A decubitus ulcer was present on the sacral region. She had restricted movements of the right side. After regaining her consciousness and when her condition was stable, she was shifted to medical ward. In the ward, she looks more relaxed and able to tolerate fluids orally.

Mrs Geetha was a widow residing with her son. She said, “For seven years my son is spending a lot on my treatment. My sickness has laid burden on him and his family.” Her son is very supportive and states, “Our mother has brought us up with lot of difficulties, so we want to take care of her well.” He added, “My mother is very religious and strong enough to face the problems of life.”

Mrs Geetha was treated in the hospital for three weeks and then discharged. On discharge, she was able to tolerate soft diet. Foleys catheter was retained. Family

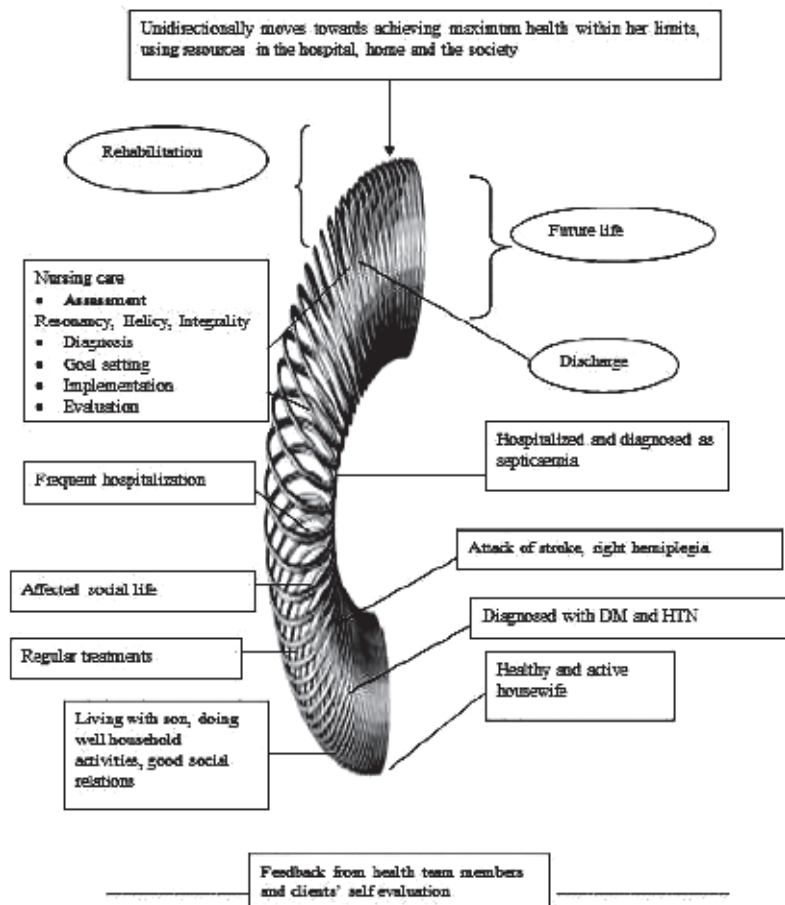


Figure 2: Application of Roger’s system model to nursing care of Mrs Geetha

members were taught about the care to be taken at home. They were referred to social workers. Mrs Geetha was able to sit with support in the bed, move her left limbs, but was dependent on others for all other activities of daily living.

**Application of Rogers’ system model to Mrs Geetha**

The data in Figure 2 explains that the pattern of Mrs Geetha changed according to the changes in life. Initially she was healthy, independent, and active in her life. Once she was diagnosed with HTN, DM and later with hemiplegia, she had to change her life style and adjust with her illness. For the seven years she was

moving towards maximum health, but she was not able to achieve it, her condition deteriorated, and she was hospitalized. Her pattern in the hospital had changed again, which was decided by others especially the health care professionals and her family members. During her hospitalization, the main concern of the nursing staff was to help her achieve maximum health. At the time of discharge, family support and rehabilitation was provided so that she is hale and hearty in future. She was using the resources from family, society, and the hospital for a better life in future. Based on the above concepts, nursing care was provided to Mrs Geetha using the nursing process.

Table 1:  
Nursing assessment based on Rogers’ system model

Assessment	Nursing Diagnosis
<p><b>Pattern</b> Mrs Geetha is a right sided hemiplegic. She said, “I cannot do anything of my own. I am dependent on others for everything.” She tolerates only fluid and soft diet and her intake is reduced. She has a deep bedsore over sacral region. Her pattern is decided by others in the hospital. She said, “I am not able to mix up with others due to my condition, I feel lonely.” Mrs Geetha’s son stated, “She is very religious and bold enough to face the problems of life, but now she has lost the confidence. She feels lonely and isolated.” Mrs Geetha strives hard to achieve the fullest health within her limits.</p> <p><b>Resonancy</b> Mrs Geetha is on treatment. She complies with it. She states, “If I do not take these medicines my condition may deteriorate further.” She further states, “My illness has laid burden on my son.” But her son is very supportive. It is observed that sometimes she is pleasant, sometimes dull and withdrawn. When she was dull she said, “I feel depressed and guilty of my illness. I do not know what will happen in the future?”</p> <p><b>Helicy</b> In Mrs Geetha’s present condition she is unidirectional in moving towards achieving health within her limits. She said, “I accept my illness; I may be recovering by using all the resources available. I do not fear death.” Her son stated, “We will support and care for our mother throughout her remaining life.”</p> <p><b>Integrity</b> As Mrs Geetha is hemiplegic and ready for discharge, her family has to do some modifications at home. She has to get treatment for her HTN and DM also. Her son stated, “I do not know how to take care of her at home and prevent any forth coming problems.”</p>	<ol style="list-style-type: none"> <li>1) Self-care deficit related to immobility.</li> <li>2) Impaired skin integrity related to prolonged bed rest.</li> <li>3) Impaired social interaction related to activity intolerance and inability to travel to usual social activities.</li> <li>4) Interrupted family process related to financial crisis.</li> <li>5) Anxiety related to prognosis of the disease.</li> <li>6) Risk for care giver strain related to the chronic illness.</li> <li>7) Knowledge deficit of the caregiver related to homecare management.</li> <li>8) Risk for complications related to the chronic illness.</li> </ol>

In the above-mentioned nursing diagnosis, the nursing care has been rendered to Mrs Geetha and according to the priority, a few nursing care aspects has been discussed herewith.

Table 2:  
Nursing care plan for Mrs Geetha

Nursing diagnosis	Goal/objective	Planning	Implementation	Evaluation
1). Self-care deficit related to immobility	To meet the self care needs (activities of daily living [ADL])	-To assist the client in meeting ADL. -Provide constant encouragement Provide family support.	- Performed ADL which the client is not able to do - Assisted the client in washing, eating, grooming etc. -Provided constant encouragement to Mrs Geetha -Provided constant reinforcement -Taught the family members about care of the client and involved them in the care of the client	Client is carrying out the activities within her limits. Family members are assisting and encouraging her.

Nursing diagnosis	Goal/objective	Planning	Implementation	Evaluation
2). <i>Impaired skin integrity related to prolonged bed rest</i>	Client maintains intact skin	<ul style="list-style-type: none"> <li>- To treat bed sore.</li> <li>-To relieve pressure on the bed sore.</li> <li>-Assist her in maintaining hygiene.</li> <li>-Educate the family members.</li> </ul>	<ul style="list-style-type: none"> <li>-Performed bed sore dressing twice a day.</li> <li>- Provided high protein and Vitamin C rich diet and maintained good hydration.</li> <li>-Changed position every two hourly.</li> <li>-Given back care every two hourly</li> <li>-Provided comfort devices like pillows, air cushion, and water mattress.</li> <li>-Assisted her in maintaining good hygiene and kept her clean and dry.</li> <li>- Educated the family members regarding the care and further prevention of bed sores.</li> </ul>	Bed sore is getting healed. Family members understood the instructions given and they are implementing them.
3). <i>Impaired social interaction related to activity intolerance and inability to travel to usual social activities</i>	To reduce client's social isolation	<ul style="list-style-type: none"> <li>-Assess social life of the family</li> <li>-Provide diversion therapy</li> <li>-Listen to clients' problems or complaints</li> </ul>	<ul style="list-style-type: none"> <li>-Assessed the family communication pattern and social life.</li> <li>-Encouraged client and family to verbalize feeling</li> <li>-Provided diversion therapy</li> <li>-Encouraged family to provide entertainment like TV, newspaper etc.</li> <li>-Involved family members in the care of the client.</li> <li>-Encouraged relatives to visit the client often.</li> <li>-Counselled the family members regarding being good listeners of the client.</li> </ul>	Client verbalized that she feels good. Family members verbalized that they will help the client to minimize her social isolation.
4). <i>Anxiety related to the prognosis of the disease</i>	To minimise the anxiety of the client and the family	<ul style="list-style-type: none"> <li>-Assess the anxiety level.</li> <li>-Assist them in verbalizing their feelings</li> <li>-Provide them with knowledge.</li> <li>-Involve the family in care of the client.</li> </ul>	<ul style="list-style-type: none"> <li>-Assessed the anxiety of the client and family as they verbalized it.</li> <li>-Encouraged them to verbalize their feelings.</li> <li>-Educated them regarding the disease condition, treatment, prognosis and home care management.</li> <li>- Introduced them to other families with similar problems.</li> <li>-Provided diversion therapy</li> <li>-Involved the family in care of client.</li> </ul>	Client and family verbalized that their anxiety is reduced to some extent.
5). <i>Knowledge deficit regarding home care management</i>	To provide adequate knowledge	<ul style="list-style-type: none"> <li>-Assess their knowledge.</li> <li>-Provide education.</li> <li>-Assess their ability after teaching.</li> </ul>	<ul style="list-style-type: none"> <li>-Assessed the knowledge level of the client and family members.</li> <li>-Educated the client and family members about care of client at home.</li> <li>-Demonstrated various procedures that need to be carried out at home and taken the return demonstration of the same.</li> <li>-Taught them regarding the necessary modifications to be done in the home setting.</li> <li>-Introduce them to other families, who have a similar client to care at home.</li> </ul>	Client and family verbalized that they got adequate knowledge regarding home care management.

**Discussion**

As per the Rogers’ theory, the nursing process has three steps i.e., assessment, voluntary mutual patterning, and evaluation. The assessment areas include, the total pattern of events in the life of client at a given point of time, simultaneous states of the client and his/her environment, rhythms of the life process, supplementary data, categorical disease entities, subsystem pathology and pattern appraisal. It is essential to have a comprehensive assessment of human being and his environment. Thus, the author has done a comprehensive assessment of Mrs Geetha and her environment based on her pattern. The mutual

patterning of the Mrs Geetha and the environment included sharing of knowledge, offering choices to her and family, empowering her and family members, repeated pattern appraisal like her dietary pattern, work/leisure activity, awake/sleep cycles, relationships with family and others, pain, hopes, and self-reflection were identified. Based on the principles of nursing process comprehensive nursing care was given to the client and family.

**Conclusion**

Application of Rogers’ system model for care of Mrs Geetha has helped the author to provide a comprehensive nursing care for the client. The author

could illustrate Mrs Geetha as a whole, how she has been interacting with her environment and the need to modify the environment according to her condition. It is recommended to use Rogers' system model by nurses in their day to day practice so as to provide comprehensive nursing care to the clients.

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