

A CASE STUDY - INITIATION OF HAEMODIALYSIS

G. Gerogianni
Haemodialysis Unit, Tzaneio hospital, Athens, Greece

SUMMARY

End-stage renal disease (ESRD) is a chronic failure of normal kidney function, which is precipitated by a number of factors, such as diabetes, pyelonephritis, hypertension, and polycystic kidney disease (1). The loss of kidney function is gradual, and many patients do not have any symptoms until the end-stage of the disease. Killingworth and Van Den Akker (2) point out that people undergoing haemodialysis have to comply with a wide range of medications and restrictions, which affect both their physiological and psychological status.

This paper presents a case study of a woman with ESRD, requiring initiation of haemodialysis. An assessment of the patient's health needs is addressed, followed by the implementation and evaluation of the nursing process. Finally, the analysis of the overall plan used in the case study is presented.

KEY WORDS

- Haemodialysis
- End-Stage Renal Disease
- Nursing Diagnosis
- Case Study

CASE PRESENTATION

The patient to be discussed was in good health until December 1997, when she was found to be hypertensive. Her subsequent medical condition in February 1998 was related to hypertensive nephropathy and End-stage renal disease (ESRD) requiring initiation of haemodialysis in June 1999. The patient was a 35-year-old, married Greek woman, with a five-year-old child. Her husband was a physiotherapist, and she was employed full-time as a teacher at a primary school. Her family history showed that her father had had renal failure, and her mother had been hypertensive for six years.

She was referred for chronic haemodialysis. In a short interview

with the doctor she reported that she had been feeling very tired the last few weeks, suffering from headaches, nausea, vomiting, and oedema. Medical examination revealed hypertension, anaemia, and a high level of phosphorous, potassium, urea, creatinine, and calcium. She was anxious, as she was completely ignorant of any issues regarding her condition, and was afraid that her disease would be fatal. A nursing care plan was commenced.

ORGANISATION OF THE NURSING CARE PLAN

The framework of the nursing care plan is based on Orem's Self-Care Deficit Theory. According to Orem's theory, nursing is required when an adult is not able to provide continuous effective self-care, and when self-care demands are more than his/her capabilities (3). Thus, nursing practice is focused on identification of self-care requisites and designing methods and actions to meet them (4). The self-care framework can be viewed as appropriate for patients with ESRD requiring initiation of haemodialysis, since it is based on determining the patient's self-care agency (ability to perform self-care), finding the therapeutic self-care demands, identifying self-care deficits, and designing and carrying out nursing systems to support the patient's self-care agency (5). Orem presents three types of nursing systems for organising nursing services:

1. Wholly compensatory system, where the patient's therapeutic self-care is central.
2. Partly compensatory system, where either the nurse or the client can have the major role.
3. Supportive-educative system, where support, guidance, teach-

BIODATA

Georgia Gerogianni, PGDip, MSc in Advanced Nursing obtained her nursing qualification in 1997. She completed her Masters in Advanced Nursing at the University of Ulster at Jordanstown, in Belfast, Northern Ireland. Georgia is now working in a dialysis unit in Tzaneio hospital in Athens and has four years working experience in the dialysis setting. She has participated in several conferences and meetings concerning dialysis care.



ing, and provision of a developmental environment are central components (6).

One or more of the three types of nursing systems can be used with a single patient, depending on the patient's needs for nursing while the nurse, the patient and the social environment are in continuous interaction for effective provision of the patient's self-care agency (3).

THE NURSING PROCESS

According to George (3), Orem uses three steps in the nursing process:

1. Diagnosis and prescription: Determines why nursing is needed, analyses, interprets, and makes judgements concerning care (Assessment, Nursing diagnosis).
2. Design of a nursing care system and plan for delivery of care (Planning).
3. Production and management of nursing systems (Implementation, Evaluation).

The above steps are considered to be the technical components in the nursing process, where interpersonal and social skills are applied for effective use of nursing interventions (3). An assessment of the patient's health needs is presented, followed by the nursing diagnosis.

| ASSESSMENT |

Personal Factors: The patient is a 35-year-old, married, Greek woman. She is a teacher at a primary school.

Universal Self-Care: She prefers fruit, vegetables, and water, as well as salty food. She would like to continue having them in her daily diet.

Social Factors: Her father had renal failure and her mother is hypertensive. Her husband is willing to help her. She has finished university.

Physical Factors: She is hypertensive. She also has hyperkalaemia, a high level of urea, anaemia, and excess fluid. She has headaches, nausea, and vomiting. She has generalised oedema.

Psychological Factors: She is afraid of death, as she is not sure about the outcome of her illness.

She is anxious about the nature of haemodialysis, because she is completely ignorant of it.

Developmental Self-care: The loss of function of her kidneys is progressive. She lost her father two years ago. Her body appearance has changed. She has lost her motivation and social interaction since she learnt that she has to undergo haemodialysis.

Health Deviation: The patient has the potential for pulmonary oedema. She also has the potential for long-term complications regarding phosphorous, urea, haematocrit, haemoglobin, potassium, and hypertension. She is very anxious about haemodialysis. She requires regular haemodialysis, education, and psychological support.

Medical Problem: The patient has renal failure, associated with hypertension and family history, with potential for pulmonary oedema and long-term complications. She has to undergo regular haemodialysis treatment three times a week in order to maintain blood pressure at normal levels and control electrolytes, fluids and nutritional status. She also requires administration of erythropoietin for treatment of anaemia.

Self-care Deficits: There is a difference between self-care needs and the patient's knowledge and life style, which increases risk for non-compliance and complications during haemodialysis.

| NURSING DIAGNOSIS |

1. Knowledge deficit related to dietary restrictions concerning haemodialysis treatment.
2. Anxiety associated with the nature of haemodialysis treatment.

| PLANNING |

Nursing Diagnosis 1: Knowledge deficit related to dietary restrictions concerning haemodialysis treatment.

Goal: The patient needs to obtain nutrition education in order to maintain optimum nutritional status and acceptable electrolyte, fluid and acid-base balance.

Objectives: By the end of the month the patient will have learnt how to meet her nutritional requirements, while maintaining electrolyte, fluid, and acid balance.

Nursing System: Supportive Educative Nursing System.

Methods of Assistance: Guidance, support, teaching, provision of developmental environment.

| IMPLEMENTATION |

Before the initiation of haemodialysis:

- The patient will attend a 'Kidney' class concerning dietary issues (7).
- The nurse will provide individualised nutritional education to the patient on a regular basis after the beginning of haemodialysis (7).
- The patient will be informed that her diet must be high in protein and low in water, potassium, phosphorous, and salt (8).
- The patient will be informed that fruit and vegetables are high in water and potassium, which increase the danger for fluid volume excess, oedema and hyperkalaemia (8).
- The dietician will jointly design a balanced renal diet plan with the patient, which is high in protein and low in salt, water and electrolytes, and conforms to her dietary requirements and eating habits (7).
- The patient will be offered alternative dietary recommendations, which can satisfy her tastes and meet her nutritional requirements if she does not agree with the existing ones.
- The patient will be provided with leaflets and written information

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about the quantity of proteins, electrolytes, water and salt contained in the main types of foods (9).

- The patient will be taught about the quantity of the above elements she should get in her daily nutrition. She will learn how to measure her daily intake of protein, electrolytes, and fluids in order to maintain a balance.
- A written meal plan will be provided with a one-day sample menu (7).
- The renal dietician will provide emotional support to the patient, to decrease the possibility of non-compliance to a complicated dietary regimen (7).
- The patient's husband will participate in the education process to fully understand his wife's condition, and effectively support her to comply with the dietary restrictions.
- The nurse will put the patient in contact with other patients who comply effectively with their diet and fluid requirements (9).

| EVALUATION |

At the end of the month the patient will:

- Understand that she must change her present life style to maintain an optimum nutritional and health status.
- Be aware of the types of food, which are high in proteins and low in electrolytes, water and salt.
- Know that fruit and vegetables are high in electrolytes, water and salt, and be willing to avoid them.
- Be able to measure her daily intake of protein in order to meet her nutritional requirements, while maintaining a balance of electrolytes, fluids, and salt.
- Be encouraged to comply with any dietary restrictions, to maintain her health status and have as normal a life as many of her fellows receiving the same treatment.
- Have decreased her self-knowledge deficit related to nutrition education.

Assessment of the evaluation:

Positive response: Efficient use of Supportive Educative System in promoting the patient as a self-care agent.

| PLANNING |

Nursing Diagnosis 2: Anxiety associated with the nature of haemodialysis treatment.

Goal: The patient needs to reduce her anxiety about the nature of haemodialysis.

Objectives: By the end of the month the patient will have reduced her anxiety related to the nature of her treatment.

Nursing System: Supportive Educative System

Methods of Assistance: Guidance, support, teaching, providance of developmental environment.

| IMPLEMENTATION |

- The patient will improve her knowledge about haemodialysis, which will help reduce her psychological stress (10).
- The nurse, in co-operation with the other members of the multidisciplinary team, will create a friendly, educative, and therapeutic relationship with the patient to support her effectively and reduce her anxiety (11).
- The patient will attend pre-dialysis classes, to be informed about the reasons for her renal failure, the necessity for beginning haemodialysis, and the importance of complying with medical recommendations (7).
- The patient will be informed about the advantages and disadvantages of haemodialysis, as well as its impact on her physical, social, and emotional status.
- The patient will be taught how to comply with any medical recommendations in order to maintain her health status.
- The nurse will explain the dialysis procedure to the patient, the possible complications during treatment, and how to cope effectively with them.
- The patient will be informed about the possibility of undergoing transplantation, which means that she will not have to receive haemodialysis for the rest of her life.
- The patient will be shown a video, explaining issues regarding haemodialysis and transplantation (7), while she will be introduced to other patients who receive haemodialysis, or have undergone transplantation, as they can offer psychological support to her (12).
- After the classes, the patient will be encouraged to have a tour of the dialysis unit accompanied by some of the members of the renal team (7). She will be taught how to use Network, as it can provide information about her condition, as well as psychological support.
- The members of the multidisciplinary team will provide continuous advocacy, encouragement, and counselling to the patient.
- The nurse educator will visit the patient at home, and maintain a telephone contact with her for continuous provision of education and support (9).
- The patient's husband will be informed about the possible physical and psychological changes, which may effect the patient after the beginning of haemodialysis (13). He will also be provided with the appropriate education in order to support his wife effectively after initiation of her treatment.

| EVALUATION |

By the end of the month the patient:

- Has stated reduced anxiety about the nature of her treatment.
- Understands the importance of complying with any medical recommendations.
- Is aware of the dialysis procedure, and knows how to cope with

any complications during her treatment.

- Is encouraged, as she has realised that she is not the only one undergoing haemodialysis.
- Is aware of the fact that she may not receive haemodialysis for the rest of her life, which helps her maintain her hope and reduce her anxiety.

Assessment of the evaluation:

Positive response: Effective use of the Supportive Educative System

ANALYSIS OF THE OVERALL PLAN AND CARE GIVEN

Orem’s Self-Care Deficit Theory was considered to be the most appropriate for the above health care plan, since the patient was not able to provide effective self-care due to lack of knowledge concerning her self-care demands. Consequently, education, teaching, and support were necessary to reduce her self-care deficits and improve her as a self-care agent. Vaughan (14) supports that teaching helps patients to increase their theoretical understanding about their condition and manage their own care independently. Thus, the supportive-educative system was very useful for the above situation, since its central components are teaching, support, guidance, and provision of a developmental environment (6). Orem’s theory regards the patient and the environment as an integrated system, assisting in the provision of self-care (6). In the patient’s situation, her husband played an important role in assisting her as a self-care agent, as he was willing to help her. Consequently, the Supportive Educative System, which was applied to the nursing process, helped both of them to create a developmental environment.

INTERPLAY BETWEEN SCIENCE AND ART

According to Basford and Slevin (15), nursing is viewed as science and art. Science is a systematic way of knowing, which aims at applying that knowledge to nursing practice. The art of nursing implies that a nurse may have not only the appropriate skills, but also a level of understanding and awareness in order to practice the art of nursing at an advanced level (16). Nursing includes the four patterns of knowing, identified by Carper (17), which are empirics, ethics, personal, and aesthetics.

1. EMPIRICS: THE SCIENCE OF NURSING

According to Basford and Slevin (15), the empirical or scientific perspective is the traditional, positivistic aspect of science. It is also regarded as organised description and observation based on experience, conceptual models and theories, which explain and predict relationships (18).

2. ETHICS: MORAL KNOWLEDGE IN NURSING

Carper (17) supports that ethic knowing is what ought to be done

and is concerned with the notions of right and wrong (15). Moral knowledge include skills of seeing, doing, and being with others in a respectful caring way

3. PERSONAL KNOWING IN NURSING

The personal knowing in nursing can be developed by clinical experience and concerns one’s capability to be introspective and understand another’s feelings. This pattern of knowing has to do with the capacity of one person to empathise with the other at a time of need (15).

4. AESTHETICS: THE ART OF NURSING

According to White (19), this form of knowing is related to intuition. In other words, aesthetics is the capability to know what to do at a given moment, without being able to explain why this particular way of action was taken.

In the field of nursing practice, the four patterns of knowing are interrelated. Nurses need to use the empiric way of knowing during their practice, since it provides objective knowledge about the disease. Additionally, ethical knowledge is very useful for nurses, because it can guide their practice in difficult cases, where for example a lethal drug is contemplated for an elderly or terminally ill patient. Additionally, personal knowing is of vast importance for nurses because they must have self-awareness before empathising with their patients. Finally, nurses need to use intuitive knowing during their practice, even though it cannot be explained on a scientific basis (15). Regarding the present case study, Orem’s Self-Care Deficit Theory included the four patterns of knowing, since the nurse tried to use her scientific knowledge in order to assess objectively the patient’s problems. She also tried to teach and support the patient effectively in a respectful way.

However, nurses face many difficulties when they have to deal with people undergoing haemodialysis. According to Ran and Hyde (20), patients often express their anger and frustration towards nurses because of long-term complications caused by their treatment. Additionally, Wellard (21) conducted a research study about the nature of dilemmas in dialysis nursing practice, where she found that sometimes patients did not believe nurses had the appropriate knowledge and expertise to provide adequate care. For this reason, nurses need to empathise effectively with these patients at a time of need in order to build a trusting relationship with them and provide them with psychological support. Additionally, dialysis nurses have to deal with the modern technology of dialysis treatment, in order to achieve the desirable therapeutic outcome in nursing practice. However, this usually makes patients feel devalued as individuals, since nurses spend little time with them (20). Thus, nurses need to maintain a balance between the technical aspect of dialysis treatment and patient support.

CONCLUSION

ESRD has a number of implications for an individual's physical, emotional and social life. This can be improved by the provision of appropriate information, education and psychological support for the patient before the initiation of haemodialysis. In the case study presented in this paper, education and psychological support helped the patient to reduce her anxiety and adapt to the restrictions of her condition. Education offers joy, relief and hope to patients undergoing haemodialysis, while it assists them to cope effectively with their condition.

The purpose of the above case study was to describe a care plan, which aimed to assess the patient's problems and effectively support her. Her social environment played an important role in her treatment regarding the fact that her husband was willing to support her. The four patterns of knowing were involved in the provision of holistic care and improvement of the therapeutic outcome. It is essential that all four patterns of knowing are used in nursing practice in order to achieve an effective provision of care.

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ADDRESS FOR CORRESPONDENCE

Georgia Gerogianni
Ariadnis 1
Ano Kypseli
113 64
Athens
Greece
Tel.: 0030 210 8615701
Mobile: 003 6976209753

REFERENCES

1. Warmington V. Renal patients in the community. *Practice Nurse* 1996; 11 (9): 620-621, 623.
2. Killingworth A, Van Den Akker O. The quality of life of renal dialysis patients: trying to find the missing measurement. *International Journal of Nursing Studies* 1996; 33 (1): 107-120.
3. George JB. **Nursing theories: The base for professional nursing practice**. 3rd ed. New Jersey, Prentice-Hall International Inc, 1990.
4. Meleis AI. **Theoretical nursing: development and progress**. 3rd ed. Philadelphia, Lippincott, 1997.
5. Miller JF. Categories of self-care needs of ambulatory patients with diabetes. *Journal of Advanced Nursing* 1982; 7:25-31.
6. Johnston RL. **Orem's self-care model for nursing**. In: Fitzpatrick JJ, Whall AL. (eds) *Conceptual models for nursing* (pp.165-184). Norwalk, Appleton & Lange, 1993.
7. Rasgon S, Annette JR, Chemleski B, Ledezma M, Mercado L, Besario M, Trivedi J, Miller M, Dee L, Pryor L, Yeoh H. Maintenance of employment on dialysis. *Advances in Renal Replacement Therapy* 1997; 4 (2): 152-159.
8. Agrafiotis TK. **The artificial kidney in theory and practice**. Athens, Scientific Publishments Grigorios Parissianos, 1984.
9. Coupe D. Making decisions about dialysis options: an audit of patients' views. *EDTNA-ERCA Journal* 1998; 24 (1): 25-26, 31.
10. Cook S. Psychological and educational support for CAPD patients. *British Journal of Nursing* 1995; 4 (14): 809-810, 821-828.
11. Ellis PA. Haemodialysis: *Professional Nurse* 1997; 13 (3): 174-178.
12. Bruno E. The dark side of the moon: How clients face dialysis. *EDTNA-ERCA Journal* 1999; 25 (3): 15-17.
13. Triantaphilopoulou E, Iphou A, Arvaniti P, Michalopoulos D, Nousis T, Tserkezis G, Velissary E, Iphos C. Psychological nursing support for elderly patients undergoing regular haemodialysis. *EDTNA-ERCA Journal* 1998; 24 (1): 29-31.
14. Vaughan B. **Patient education in therapeutic nursing**. In: McMahon R, Pearson A. (eds) *Nursing as therapy* (pp. 85-101). London, Charman & Hall, 1991.
15. Basford L, Slevin O. **Theory and practice of nursing: An integrated approach to patient care**. Edinburgh, Champion Press Limited, 1995.
16. Johnson J. A dialectical examination of nursing art. *Advances in Nursing Science* 1994; 17 (1): 1-14.
17. Carper BA. Fundamental patterns of knowing in nursing. *Advances in Nursing science* 1978; 1 (1): 13-23.
18. Chinn PL, Krammer MK. **Theory in nursing: a systematic approach**. 4th ed. St. Louis, Mosby-Year book, 1995.
19. White SJ. Evidenced-based practice in nursing: the new panacea? *British Journal of Nursing* 1997; 6 (3): 175-178.
20. Ran KJ, Hyde C. Nephrology nursing practice: more than technical expertise. *EDTNA/ERCA Journal* 1999; xxv (4): 4-7.
21. Wellard S. The nature dilemmas in dialysis nurse practice. *Journal of Advanced Nursing* 1992; 17: 951-958.