EFFECT OF ROY ADAPTATION MODEL APPLICATION ON PATIENTS UNDERGOING HEMODIALYSIS

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ABSTRACT

Background: The Roy Adaptation Model (RAM) focuses on the physiological and psychosocial adaptation of patients to the environment by using the four adaptive modes: physiologic, self-concept, role function, and interdependence. **Aim:** To evaluate the effect of the (RAM) application on patients undergoing hemodialysis**. Subjects and method: Design:** One group quasi-experimental design (pre and post) was used in this study. **Setting:** This study was conducted at hemodialysis unit of General hospital in Port Said city. **Subjects:** The study data was collected from purposive adult patients undergoing hemodialysis (no=105) in 9 months. **Tools:** two **tools were used, tool I**: includes structure interview questionnaire, **Tool II:** designed model based on RAM tools**. Results:** There was an observed improvement in mean ±SD of total RAM modes 246±39.2 post model implementation compared to 218±40.3 pre- model implementation. There was a statistically significant difference for the mean scores of RAM modes of patients (physiological, self-concept, work role function, and independence and interdependence mode) on pre and post-application of RAM. **Conclusion:** There was a statistically significant difference for the mean scores of physiological, self-concept, work role function, and independence and interdependence mode of patients on pre and post-application of RAM. There was observed improvement in adaptation level among patients undergoing hemodialysis after application of RAM, especially in Independence and Interdependence mode. **Recommendations:** Encourage further study on theory-based patient care for chronic and acute illnesses. Encourage effective utilization of research findings on the management of diseases affecting hemodialysis patients.

Keywords: Patient undergoing hemodialysis, Roy Adaptation Model.

INTRODUCTION

Hemodialysis is an ESRD treatment in which blood is removed from the body and its chemical composition is altered by releasing blood via semi-permeable membranes to eliminate waste elements, and then it is back to the body. In addition to eliminating waste items, other vital products are supplied to the blood during this procedure. The majority of patients require 9-12 hours of dialysis per week, split over numerous sessions. Unpleasant side effects of hemodialysis such as hypotension, muscle cramps, nausea, and vomiting could happen during the process (Chen, et al, 2015; Farag, and El-Sayed, 2022).

Normal daily life considerably deteriorates in patients undergoing hemodialysis. Physical inability in those causes psycho-social problems such as dependence on the treatment team and machines, change in roles in the family, restricted working life and social relations, change in body image, ambiguity about the future, despair, depression, and change in daily life activities (DLA). So, there is a need for the development of adaptation levels among patients undergoing hemodialysis (HD) (Güngör, and Atik, 2020).

The RAM focuses on the physiological and psychosocial adaptation of patients to their environment. Roy built on the model, developing a theoretical concept of coping within each of the four adaptive modes that patients use to adapt to their environment: physiologic, self-concept, role function, and interdependence to evaluate patients' health status, establish good communication, set goals of care, and improve the quality of care (Baksi and Dicle, 2017). Therefore, there was a need to use Roy's adaptation model on patients undergoing hemodialysis, seeking to enable these patients to adapt to their treatment and feel integrated into the process.

Using the nursing models facilitates systematic, deliberate, controlled, and effective patient care. Roy Adaptation Model is one of the most utilized models in nursing. According to Roy Adaptation Model, nursing aims to increase compliance and life expectancy. Patients with hemodialysis are evaluated in physiologic mode, self-concept mode, role function mode, and interdependence according to Roy Adaptation Model mode which provides holistic care to the patients (Russo, et al. 2019).

Significance of the study

Hemodialysis dialysis is necessary to sustain the lives of patients with ESRD. However, HD affects patients' quality of life and is associated with physical,

psychological and socioeconomic effects on patients, and their families (Bilal et al., 2020). Therefore, Adaptation to the existing stimulus through coping and adjustment mechanisms is important to deal with the challenges related to hemodialysis. One of the most widely used models in nursing to provide holistic care is the Roy Adaptation Model (RAM). The focus of RAM is the changes that help to guide intervention to adapt to the physiological and psychological adaptation response and other health problems and return to their natural life (Yildiz, and Karago, 2021). Therefore, the main aim of this study is to evaluate the effect of the Roy Adaptation Model application on patients undergoing hemodialysis.

AIM OF THE STUDY

To evaluate the effect of the Roy Adaptation Model application on patients undergoing hemodialysis.

this aim was achieved through:

Design model based on Roy's Adaptation Model on patients undergoing hemodialysis

Apply the designed model based on Roy's Adaptation Model on patients undergoing hemodialysis

Evaluate the applied model based on Roy's Adaptation Model on patients undergoing hemodialysis (post 3months of model application).

Research hypothesis

H1: Physiological mode of patients undergoing hemodialysis will be improved after applying the designed model based on Roy's Adaptation Model

H2: Self- concept mode of patients undergoing hemodialysis will be improved after applying the designed model based on Roy's Adaptation Model.

H3: Role-function mode of patients undergoing hemodialysis will be improved after applying the designed model based on Roy's Adaptation Model

H4: Interdependence mode of patients undergoing hemodialysis will be improved after applying the designed model based on Roy's Adaptation Model.

SUBJECTS AND METHOD:

I. Technical Design:

Research design:

One group quasi-experimental design (pre and post) was used in this study to achieve the aim of this study. A one-group quasi-experimental design is a quasi-experimental research design in which the same dependent variable is measured in one group of

participants before (pretest) and after (posttest) treatment is administered (Polit & Beck, 2022).

Study Setting:

This study was conducted at Port-Said General Hospital (El- Salam Hospital) which is affiliated to the ministry of health and become under comprehensive health insurance. The hemodialysis unit contains 47 dialysis machines and 37 patients' beds.

Study Subject

The study data were collected from purposive adult patients (male and female) who undergoing hemodialysis sessions on Saturday, Monday, and Wednesday in three shifts per day, and the number of patients in the session was 35 patients. As a result, the total number of participants in the study was 105 in 9 months at El- Salam Hospital.

Tools for data collection:

The data was collected by the following tools:

Tool I: structure interview:

This tool was developed by the researcher based on a literature review (Russo et al, 2019 and Mansouri et al, 2019). It included two parts as follows:

Part I: Socio-demographic characteristics:

This part includes 8 items related to the patient's socio-demographic data as (age, sex, marital status, level of education, number of family members, occupation, and level of income per month and if this income is sufficient for medical expenses).

Part II: Patient's medical history:

This part includes 2 parts related to the patient's medical history as

Family history: which contains 2 questions as, does a family member suffer from renal failure and his other relation to the patient.

Current medical history: This contains 6 questions as (symptoms, knowing, date of occurrence, number of hours/session, Frequency session/week, problems exposed during the hemodialysis).

Tool II: A designed model based on Roy adaptation model tool

This tool was developed in line with the literature review to measure the extent of adaptation of the four modes of Roy's model as follows:

Part 1: Physiological mode regarding patients undergoing hemodialysis

This part was developed by the researcher in line with the literature review (Alyassin, 2018). It included 22 questions related to personal hygiene, nutrition, elimination, urination, caring of arterial-venous access, rest, and physical activities for patients undergoing hemodialysis.

Part 2: Self–concept mode regarding patients undergoing hemodialysis:

This part was adapted from (Lin et al., 2012), It contained (15 questions) to assess the general sense of predicting coping with daily hassles after experiencing hemodialysis difficulties such as Self-autonomy self-integration, problem-solving, and seeking social support.

Part 3: Work Role functioning mode regarding patients undergoing hemodialysis):

This part was adopted from (Femke et al, 2017). It contains (27 questions) with a three-item scale (never- some time all of the time) to measure the perceived difficulties in meeting work among hemodialysis patients.

Part 4: Independence and Interdependence mode regarding patients undergoing hemodialysis (Singelis Self-Construal Scale)

This tool was adopted from (Singelis, 1994) to measure a variety of feelings and behaviors in various situations of patients undergoing hemodialysis. The attached scale contains the original 12 independent items and 12 interdependent items from Singelis, 1994. Six additional items have been added to improve the internal reliabilities of the original scale. Scoring system:

As regards part 1, part 2, and part 3 of tool 3 (designed model based on Roy adaptation model tools) was scored zero for never, one for some time, and two for all of the time. While part 4 was scored one for strongly disagree, two for disagree, three for agree somewhat, four for don't agree and don't disagree, five for agree somewhat, six for agree, and seven for strongly agree. No cut-off point was established for it and, thus, the higher the score is, the higher the patient's level of adaptation is.

II. OPERATIONAL DESIGN:

The operational design includes the preparatory phase, content validity, reliability, pilot study, and fieldwork.

A-Preparatory Phase

It includes reviewing the literature, different studies, and theoretical knowledge of various aspects of the problems using books, articles, the internet, periodicals, and magazines.

B- Content Validity

It was ascertained by the odd number of experts including medical and nursing staff. Their opinion was directed regarding the tool format, consistency, and scoring system. The content of the tools was ascertained by 9 experts from the Medical-Surgical Nursing Department, Community Health Nursing Department, and Department of Mental Health Nursing, Faculty of Nursing, Port Said University, and from the department of medicine,

Faculty of Medicine, Al-Azhar University who revised the tools and modifications were done according to their opinion to evaluate the accuracy, relevance, and completeness of the content of tools.

Reliability

Reliability analysis by Cronbach's Alpha test was done to measure the overall consistency of the items that are used to define scales. Reliability was good if more than 0.70 (Polit & Beck, 2022).

The reliability of physiological mode was 0.70, self-concept mode was 0.76, role function mode was 0.85, and independence and interdependence mode was 0.80.

C- Pilot Study

The pilot study was conducted on 10% of hemodialysis patients (11 patients) to assess the tools' applicability, after which appropriate modifications were made based on the results of the pilot study. Items were corrected or added as needed. The results from the pilot study were included from the main statistical sample because there were no modifications in the used tools.

D- Field Work

The field of the study was carried out for nine months from the beginning of July (2019) to the end of April (2020). The study was conducted through the following phases:

Assessment phase:

The researcher analyzed the patient's socio-demographic data using the tool I during this stage, which lasted three months after the tools were finalized. Tool II, on the other hand, was created using the Roy Adaptation Model to assess a patient's ability to adapt to hemodialysis using the Roy Adaptation Model's four main modes (physiological, self-concept, role functioning, and interdependence mode). Each patient was given this tool by the researcher, who explained it to them and requested them to fill it out. The gadget took between 54 and 60 minutes to fill. The RAM-based model was created in response to the researcher's findings of patient wants and requests, as well as the most recent literature.

The Roy Adaptation Model application phase

The educational RAM was created based on patient needs and demands indicated during the evaluation process, as well as a review of related literature. This phase included the following;

Setting RAM objectives:

The educational model aimed to improve adaptation among patients undergoing hemodialysis.

Preparation of the content:

The content covered all aspects of caring for patients undergoing hemodialysis was prepared which included the following:

Summary about End Stage Renal failure

Types and purpose of dialysis

Health diet for patients undergoing hemodialysis

Medication and hemodialysis session

Chick elimination and urination

Caring of arterial-venous access

Rest and physical activities

Weight and how to maintain it among patients undergoing hemodialysis.

Problems related to long term hemodialysis and how patients deal with them

C- Planning phase:

In this step, the researcher designed a plan for educational model implementation. The model involved four sessions was delivered throughout 12 weeks, and The session timing was between morning and afternoon shift, and each session lasting 45to 60 minutes, The total number of groups was 10 groups (10 patients for 5 groups while 11 patients for other 5 groups). In addition, the model teaching strategy was determined by selecting the appropriate teaching method which was in the form of (lecture, small group discussion, demonstration, and re-demonstration, and using handout included theoretical content related to Roy Adaptation Model among patients undergoing hemodialysis.

Roy Adaption Model application phase:

The implementation of the model based on RAM was carried out at the hemodialysis unit in the study setting. The educational model was administered in four sessions; the duration of each session lasting for 45 to 60 minutes. The sample was divided into 10 groups; each session included ten or eleven patients. At the beginning of the first session of the educational model, patients were given an idea regarding introduction to the model and its importance, presentation of the model. The model was implemented three days per week during the hemodialysis sessions in the morning and

afternoon shifts for a period of five months from August 20th, 2019 up to February 1st, 2020. Plan and presentation of learning objectives were explained to each group separately.

In the 1st session, the researcher clarified in brief manner anatomy, physiology, Functions, and importance of the urinary system and the nature of the renal failure. Meanwhile, the definition, purpose, advantages, and disadvantages of hemodialysis, pre, during, after hemodialysis session instructions, and problems resulting from lack of commitment of treatment were discussed in the 2nd session. In addition, the content of the 3rd session was the definition of adaptation and the physiological mode of RAM. At the 4th session, the researcher explained the self-concept, role function, interdependence mode of RAM.

Each patient was given a copy of the handout to facilitate remembering what they learned during the theoretical portion of the presentation. The model was presented in clear and concise form using different teaching methods such as small group discussions, lectures, demonstration and re- demonstration, and appropriate teaching media as visual material (handout). At the beginning of each session, It was appropriate to begin each session with a brief review of what had previously been learned. This was followed by a statement of the current session's aims. The researcher discussed all of the RAM modes in front of the patients, going over each aspect of the model with them and ensuring that they understood everything.

The researcher stressed that this was a training session, not an evaluation; therefore mistakes and forgetting were acceptable and were quickly corrected by the researcher. Finally, the researcher provided her with feedback, beginning with the positive and progressing to the bad, and any missing points or errors were immediately corrected to prevent other patients from making the same mistakes. Patients were also asked to provide feedback about the researcher.

Evaluation phase:

The model outcome was evaluated by using Tool II and III, after three months of model implementation, the patient's theoretical knowledge was evaluated by using Tool II, while patients' adaptation was evaluated by using Tool III. The researcher informed patients to evaluate the effectiveness of the model and gave the questionnaire to fill it. The effectiveness of the model was based on assessing the improvement in patients'

knowledge and adaptation level. This was achieved by comparing the pre-test with the post-test three months later of the implementation of the model.

III. Administrative Design

By submitting a formal letter from the vice dean of the Faculty of Nursing at Port Said University, official approval for data collection was acquired from the study's chosen area (the director of the center for genetic counseling in Port Said city) and from the hospital administrative employees. Meetings and discussions were held between the researcher, administrative workers, and hemodialysis patients to inform them of the research's goals and objectives, as well as to improve cooperation during the data collection process.

Ethical Consideration:

The researcher clarified the objective and aim of the study to patients, The patient was informed that they have the right to refuse to participate in the study and that they have the right to withdraw from the study at any time without reason, and that this withdrawal did not affect the care they received at the hospital. The research tools did not cause any harm or pain to the participant patients.

Statistical design:

The data was collected, organized, reviewed, scored, tabulated, and analyzed using the number and percentage distribution. The statistical analysis was carried out on a computer using the Statistical Program of Social Science Model (SPSS) version 16 package. To assess whether there was a significant statistical difference between the study's variables, proper statistical tests were applied.

RESULTS:

Table (1): shows that 60 % of studied patients were from 40 to < 60 years with a mean age of 49.3±1.2. Regarding sex, 51.4% of studied patients were male and 95.2% of studied patients were married. As regards education, 4.8 % of the studied patients had a low level of education (read and write) and 66.7% of studied patients didn't work. Meanwhile, 65.7% of studied patients had not enough income and 79% of studied patients didn’t able to cover medical expenses.

Table (2): illustrates that 63.8% of studied patients had no family history of renal failure. However, 65.8% of them had first-degree consanguinity and 45.7% of them discovered their disease by symptoms. Regarding current problems with hemodialysis, 46.7% of studied patients suffered from hypertension during a hemodialysis session.

Table (3): illustrates that there was observed slight improvement in mean ±SD of total Physiological mode 29.2±6.2 post model implementation compared to 26.1±5.8 pre-model implementation. There was observed slight improvement on mean ±SD of total

self-concept mode 24.5±5.0 post model implementation compared to 20.3±6.9 pre- model implementation. While there was observed improvement on mean ±SD of total work role functioning mean ±SD 31.8±5.3 post model implementation compared to 22.9±1.5 pre-model implementation. In addition, there was a slight improvement in total Independence and Interdependence mode, mean ±SD 160.5±1.6 post model implementation compared to 148.7±2.1 pre- model implementation. More while, there was an observed improvement in mean ±SD of total RAM modes 246±39.2 post model implementation compared to 218±40.3 pre- model implementation.

Table (4): demonstrate that there was a statistically significant difference for the mean scores of physiological assessment, self-concept assessment, work role function, and independence and interdependence mode of patients on pre and post-application of RAM with ($p < 0.05$).

Table (1): Frequency and percentage distribution of the socio-demographic characteristics of the studied patients (n=105)

Item	Frequency (No)	Percentage (%)
Age / years		
20 < 40	19	18.1
40 < 60	63	60.0
60 - 80	23	21.9
Mean ±SD	49.3±1.2	
Gender		
Male	54	51.4
Female	51	48.6
Marital status		
Married	100	95.2
Single	5	4.8
Educational level		
Illiterate	34	32.4
Read and write	5	4.8
Basic education	22	21.0
Moderate education	34	32.4
High education	10	9.5
Occupation		
Work	35	33.3
Not work	70	66.7
Family number		
2 – 4	46	43.8
5 – 7	57	54.3
8 - 10	2	1.9
Mean ±SD	5±1.2	
Family income		
Enough	36	34.3
Not enough	69	65.7
Income sufficient to cover medical expenses		
Yes	22	21
No	83	79

Table (2): Frequency and percentage distribution of the family history of the studied patients (n =105):

Item	No	%
Family history		
Yes	38	36.2
No	67	63.8
Relativity (No =38)		
First degree	25	65.8
Second degree	13	34.2
Discovering disease (No = 105)		
By chance	21	20.0
By medical examination	36	34.3
By symptoms	48	45.7
Current problems with hemodialysis		
None	11	10.5
Hypertension	49	46.7
Abdominal pain	29	27.6
Fever	9	8.6
Headache	25	23.8
Allergy	9	8.6
Palpitation	14	13.3
Nausea	20	19.04
Vomiting	22	21.0
Chest tightness	12	11.4
Blurred vision	4	3.8
Edema around eye	2	1.9
General weakness	2	1.9
Dysuria	3	2.9
Difficult movement	11	10.5
Musculoskeletal pain	3	2.9
Hypotension	7	6.7
Dyspnea	4	3.8
Heart failure	3	2.9

*numbers not mutually exclusive

Table (3): Differences between modes of RAM pre and post model implementation regarding patients undergoing hemodialysis (n =105):

RAM modes	Pre model implementation Mean ±SD	Post model implementation Mean ±SD
Total Physiological assessment	26.1±5.8	29.2±6.2
Total self-concept	20.3±6.9	24.5±5.0
Total work role functioning	22.9±1.5	31.8±5.3
Total Independence and Interdependence mode	148.7±2.1	160.5±1.6
Total RAM Modes	218±40.3	246±39.2

Table (4): Relation between Roy Adaptation modes pre and post model implementation

Roy Adaptation Model implementation scales	Pre model implementation Mean±SD	Post model implementation Mean±SD	T Test	Sig
Physiological assessment	26.2±5.8	29.2±6.2	4.01	.000
Self- concept	20.3±6.9	24.5±5.04	4.86	.000
Work role functioning	22.9±9.3	31.8±8.2	4.08	.000
Independence and interdependence mode(Singelis Self- contrual)	148.7±2.1	160.5±1.6	4.04	.000

DISCUSSION

Roy Adaptation Model is one of the most useful conceptual frameworks that guide patients' interventions. It focuses on patients' adaptation to a changeable environment and guides the administration of patients' interventions for improvement of adaptive responses in each dimension (physiological, self-concept, interdependence, and role function.

The result of the current study indicated that the majority of the studied patients suffered from hypertension. This result is consistent with (Gorsane, et al., 2015) who carry out study prevalence and risk factors of hypertension in hemodialysis, and (Wallbach, Moraes, and Filho, 2019) who carried out a study about hypertension in patients on dialysis: diagnosis, mechanisms, and management, found that hypertension is common in most patients undergoing regular dialysis.

However, the present study showed that there was an improvement in the mean of the physiological mode of studied patients after the implementation of RAM, which was shown through the improvement in the ability of the studied patients to perform personal hygiene and the awareness regarding the nutrition and care of arterial-venous access. This result is supported by many studies, such as Vicdan and Karabacak, (2016) who studied the effect of treatment education based on the Roy Adaptation Model on the adjustment of patients undergoing hemodialysis , as well as Alimohammadi Maleki, Shahriari, and Chitsaz, (2016), who performed a study about the effect of a nursing intervention based on the Roy Adaptation Model biological dimension on patients' physiologic adaptation level, reported that there was an increase in the study group's mean adaptation score in the physiologic domain after implementation of RAM.

As regards self-concept mode, the hemodialysis therapy may negatively affect the patient's perception and self-concept, which may be due to the physical changes such as uremia-mediated changes in the skin, anemia-mediated color change, having to live with a shunt or a fistula on the arm, and weight gain due to fluid overload. Therefore, self-the concept was one of the necessary concerns of RAM. The present study demonstrated that there was an improvement in the mean of total self-concept mode, which was revealed through promoting the patient's self-autonomy, self-integration, solving the problems, and seeking social support after the implementation of RAM. This result agrees with Agustiyowati, Sitorus, Waluyo, and Besral, (2018), who studied the effectiveness of Roy's Adaptation Model for patients with chronic kidney disease undergoing pre-dialysis in Indonesia, reported that Roy's Adaptation Model for patients with chronic kidney disease undergoing pre-dialysis was significantly effective in improving psychological adaptation behavior,

Additionally, Kavuran, and Yurttas, (2018) who conducted a study about the effects of education based on the Roy adaptation model on patients with chronic disease, reported a significant increase in the mean scores on the subscales of self-concept mode after education in the experimental group, which represented the improvement of the mean score of seeking social support, accepting responsibility, planned problem solving, and positive reappraisal in post- RAM intervention.

Concerning work role functioning, the present study showed that there was an improvement in the ability of the studied patients to meet the demands of work, improve the work output, finish work on time, and meet the physical, mental, and social demands; as well as promote the ability to set priorities in work, deal with changes, and perform multiple tasks at the same time after the implementation of RAM, which led to improvements in the mean score of work role functioning mode. This result is in accordance with Vicdan and Karabacak, (2016) who discovered that after RAM intervention, mean scores in all sub-dimensions of role function adaptable was improved. Furthermore, Agustiyowati et al, (2018) reported that the intervention group's mean score, role function score, was improved after the application of RAM.

Regarding total independence and interdependence modes, the present study reported that there was an improvement in the mean score of the independence and interdependence modes after model implementation. There was an improvement in the patients' feelings toward themselves, personal identity, speaking during a class or meeting, dealing with the different situations, feeling toward others, and interacting with others in the different situations that affect the patient's happiness. These findings are consistent with those of Agustiyowati et al. (2018) and Gamal et al. (2019), who conducted a study on the effect of nursing care, guided by Roy's Adaptation Model on the self-evaluation of patients after surgery and found a significant difference in interdependence mode in the intervention group compared to the control group.

The present study reported that there was an improvement in adaptation levels among patients undergoing hemodialysis after the application of RAM. This result is consistent with Mansouri, Baraz, Elahi, Amal, and Saberipour, (2019) who revealed that intervention patients had statistically significantly better total scores on Roy's adaption model over time and an increase in the adaptation level when compared to control patients. Furthermore, Atik, Karatepe, and Yuce, (2020) who conducted a study about the relationship between fluid control and disease adaptation levels with symptoms in patients undergoing hemodialysis, reported that intervention patients showed a significant improvement in mean scores of the adaptation level among intervention patients over time compared with control patients

CONCLUSION:

Based on the results of this study, there was a statistically significant difference for the mean scores of physiological, self-concept, work role function, and independence and

interdependence mode of patients on pre and post-application of RAM. There was observed improvement in adaptation level among patients undergoing hemodialysis after application of RAM, especially in Independence and Interdependence mode.

RECOMMENDATIONS

Encourage further study on RAM-based patient care for chronic and acute illnesses.

Encourage effective utilization of research findings on the management of diseases affecting patients with hemodialysis.

Develop educational program about Roy Adaptation Model among patients undergoing hemodialysis for healthcare providers and professionals that effect on improved medical care provided to the patient.

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تأثيرتطبيق نموذج التكيف لروى على المرضى الخاضعين للغسيل الكلوى

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الـخـلاصـــة

المقدمة: يعتبر الغسيل الكلوى الآن علاج طبي لا غنى عنه للمرضى الذين يعانون من الفشل الكلوي في نهاية المرحلة والذين واجهوا صعوبات في التكيف مع العديد من المشاكل الفسيولوجية والنفسية. يركز نموذج روي للتكيف على التكيف الفسيولوجي والنفسي الاجتماعي للأشخاص مع بيئتهم. بنى روي على النموذج ، مطورًا مفهومًا نظريًا للتكيف داخل كل من الأوضاع التكيفية الأربعة التي يستخدمها الناس للتكيف مع بيئتهم: الفسيولوجية ، ومفهوم الذات ، ووظيفة الدور ، والاعتماد المتبادل. **الهدف من الدراسة:** دراسة تأثير تطبيق نموذج روى للتكيف على المرضى الذين يخضعون للغسيل الكلوى. **التصميم:** تم استخدام تصميم شبه تجريبي لمجموعة واحدة (قبل وبعد) في هذه الدراسة. العينة: تم جمع بيانات الدراسة من جميع المرضى البالغين المتاحين (ذكورًا وإناثًا) الذين يخضعون لغسيل الكلى. بلغ مجموع مجتمع الدراسة 105 في 9 أشهر بمستشفى بورسعيد العام. **النتائج:** كان هناك تحسن ملحوظ بين متوسط الدرجة الإجمالية لموذج روى لتكيف بعد تنفيذ النموذج 246 ± 39.2 مقارنة بـ 218 ± 40.3 قبل تنفيذ النموذج. كان هناك فرق ذو دلالة إحصائية بين متوسط الدرجات لأنماط نموذج روى للتكيف للمرضى (الفسيولوجية ، ومفهوم الذات ، ووظيفة دور العمل ، ووضع الاستقلال والاعتماد المتبادل) في ما قبل وبعد تطبيق نموذج التكيف لروى. **الخلاصة:** كان هناك فروق ذات دلالة إحصائية بين متوسطات الدرجات الفسيولوجية ، ومفهوم الذات ، ووظيفة دور العمل ، ونمط الاستقلالية والاعتماد المتبادل للمرضى قبل وبعد تطبيق نموذج روي التكيف. لوحظ تحسن في مستوى التكيف بين المرضى الذين يخضعون لغسيل الكلى بعد تطبيق نموذج روي التكيف ، وخاصة في وضع الاستقلال والاعتماد المتبادل. **التوصيات:** تشجيع المزيد من الأبحاث حول الرعاية التمريضية القائمة على النظرية لإدارة الأمراض المزمنة والحادة. تعزيز الاستخدام الفعال لنتائج البحوث في إدارة الأمراض التي تعالج مرضى غسيل الكلى.

الكلمات المرشدة: نموذج روي التكيف - المريض الخاضع للغسيل الكلوي.