

# Narrative Literature Review: Sexual Dysfunction in the Patient on Hemodialysis

Merry Stewart



The demands on patients on chronic dialysis have been suggested to be the most stressful of all other illnesses and treatment regimens (Flaherty & O'Brien, 1992). Roy and Andrews (1991, 1999) suggest that effective adjustment or adaptive processes are essential for patients to cope with the demands made by the day to day effects of chronic illnesses and treatments such as end stage renal disease (ESRD) and hemodialysis (HD). Demands of physical problems are more recognized and may be considered as a priority in patients on dialysis; however, psychosocial factors may often be the predominant cause of maladaptive processes or ineffective coping for these patients (Binik & Mah, 1994; Dailey, 1998; Harries, 1996). This may be particularly true in regards to the sexual and relationship dimensions of patients on dialysis (Binik & Mah, 1994; Camsari et al., 1999; Dailey, 1998).

Sexual dysfunction (SD) (sexual changes and concerns) is reported to be common in patients with ESRD who are treated with HD (Dailey, 1998; Harries, 1996; Leavey & Weitzel, 2002; Palmer, 1999; Palmer, 2003). The importance of assessment and interventions related to sexual dysfunction has been acknowledged by the American Nephrology Nurses' Association (ANNA) with the inclusion of "the expression of satisfaction with sexuality" as a standard of nursing care in 1988 (Brennan, Burrows-Hudson, Day, & Libonate, 1988) and in the 2005 guidelines for care, which

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*Sexual dysfunction is common in patients on hemodialysis. This narrative literature review utilized Roy's Adaptation Model to identify sexual dysfunction and its effect on adaptive modes in patients on hemodialysis. The majority of studies reviewed indicated a physiologic effect in men (78%). Fewer studies reported an effect on self-concept (66%), intimate relationship (21%), or family/social roles (less than 1%). Findings also revealed minimal patient expression of sexual dysfunction to health care providers.*

## Goal

To relay information found in a review of the literature on sexual dysfunction in patients on hemodialysis.

## Objectives

1. Describe the 4 adaptive modes used as a framework in Roy's Adaptation Model.
2. Contrast the literature reports focusing on sexual dysfunction to those on physiologic, self-concept, role, or interdependence modes of patients on hemodialysis.
3. Contrast patients' stated needs for discussion about concerns with sexual dysfunction with their perceptions of caregivers' willingness to engage in that discussion.
4. Suggest nursing research needed in the area of sexual dysfunction in patients on hemodialysis.

state that "The patient will experience satisfaction with sexuality and sexual activity" (Burrows-Hudson & Prowant, 2005, p. 49).

However, there are indications that this outcome is not being achieved. As an example, in a personal communication to the author of this literature review, a patient stated "Both men and women in the dialysis center talk about the devastating effects of loss of sexual desire or function, but the doctors and nurses don't talk about this." This claim raises a question as to whether research supports that nurses and other health care providers are adequately identifying the sexual problems of patients

on HD and the effect of patients' adaptive/coping processes. Roy's Adaptation Model provides a framework for reviewing and categorizing current research literature as this model identifies human adaptive processes and the effect of problems such as sexual dysfunction on these processes (Roy & Andrews, 1991, 1999).

## Roy's Adaptation Model

Roy has identified four adaptive modes or ways of manifesting adaptive processes – the physiological, self-concept, role function, and interdependence modes. Any of these

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The Nephrology Nursing Certification Commission (NNCC) requires 60 contact hours for each recertification period for all nephrology nurses. Forty-five of these 60 hours must be specific to nephrology nursing practice. This CE article may be applied to the 45 required contact hours in nephrology nursing.

modes alone or in combination may be affected by sexuality and relationship changes or concerns. Roy and Andrews (1999) state that human sexuality involves more than the sex act or reproduction; but also “who and what we are as male and female” (p. 383). Roy’s model supports the ANNA nursing standard and guidelines of care with the acknowledgment that “sexuality is a human experience that needs to be explored, experienced, and shared” (p. 388).

### **Physiologic Mode**

The physiologic mode is “associated with the physical and chemical processes involved in function and activities of living organisms” (Roy & Andrews, 1999, p.102). Sexual adaptive problems in this mode include hormonal alterations that may lead to impotence in the male and decreased fertility in the female, either of which may lead to feelings of asexuality.

### **Self-Concept Mode**

The self-concept mode pertains to the personal aspect of the human system or the “need to know who one is so that one can be or exist with a sense of unity, meaning and purposefulness...” (Roy & Andrews, 1999, p.107). The Roy Adaptation Model divides the self-concept mode into two components – physical and personal self. The physical self is described as the appraisal of one’s own physical being and includes body sensation and body image. The personal self is described as the appraisal of one’s own characteristics, expectations, values, and worth. Sexual dysfunction in the self-concept mode is defined as ineffective physical or psychological sexual behavior that is identified by the patient.

### **Role Function Mode**

The role function mode refers specifically to the place that a person holds in society and how the person acts in that role according to society’s expectations. Roy and Andrews (1999) suggest that sexual adaptive problems in the role function mode may lead to role distancing or role

failure, which may then interfere with the patient’s adaptive processes and expected involvement in his treatment plan.

### **Interdependence Mode**

The interdependence mode focuses on the close relationships of people as individuals versus one’s role in society. A basic underlying need within this mode is for relational integrity or feeling of security and satisfying relationship with significant other (person with whom meaning of most importance is given) and with support systems (others with which one associates) (Roy & Andrews, 1991, 1999). Roy and Andrews (1999) cite an older study by Cohen (1985) which supports that poor personal relationships may negatively influence quality and length of life for the patient on long-term maintenance dialysis. An assessment of the effect of sexual dysfunction on the interdependence mode may therefore be essential to promotion of positive adaptation and quality of life for the patient on dialysis.

ESRD and HD clearly result in both physical and psychosocial problems that may affect any of the four adaptive modes. The effect on one’s sexuality should not be overlooked. Health care providers should not only be aware of how ESRD and HD affect sexuality and relationships, but also of how sexuality and relationship issues may affect the patient’s adaptive processes.

### **Hemodialysis and the Role of Nephrology Nursing in the United States**

In the United States, there are more than 400,000 persons with ESRD. Of this number, there are more than 300,000 on maintenance dialysis with the most common form being hemodialysis (United States Renal Data System, 2005). The scope of practice for nephrology nursing asserts that a primary goal of the nurse is to diagnose and treat human responses of patients with ESRD and their families (ANNA, 2004). Disruptions of the physiologic mode,

self identity, family-social role, and personal/intimate relationships may significantly interfere with effective adaptive or coping processes in the patient on chronic dialysis. The assertion in the Roy Adaptation Model (Roy & Andrews, 1991, 1999) that the goal of nursing is to promote adaptation for individuals is supported by the ANNA which states that the treatment of psychosocial disruptions should include the delivery of “psychosocial support to build or sustain coping capacity” (ANNA, 2004). Sexual changes and concerns may present as a physical and/or psychosocial disruption for the patient on hemodialysis. Helping the patient to achieve “the expression of satisfaction with sexuality” may be a significant aspect of health and life quality for this patient.

### **Purpose**

The purpose of this article is to review nursing, allied health, and the medical research literature for descriptions of nurses and other health care provider’s assessment of sexual dysfunction and its effects on adult patients on hemodialysis. The specific goals of this descriptive narrative review are to 1) identify descriptions of sexual changes/concerns and of related interventions for adult patients on hemodialysis and 2) to identify the effect of sexual problems on the adaptive processes of patients on hemodialysis.

### **Method**

Published research reports pertaining to patients on hemodialysis and issues of sexuality were reviewed to identify descriptions and effects of sexual changes and concerns specific to the adult patients on hemodialysis. The articles and abstracts examined for this descriptive narrative review included research conducted from 1990 to 2005.

The computer versions of Cumulative Index to Nursing and Allied Health Literature (CINAHL) and MEDLINE search were used to

search for research reports specific to patients on hemodialysis and sexual dysfunction. Key words included sexual, sexuality and or sexual dysfunction combined with chronic kidney disease, dialysis, end stage renal disease, hemodialysis, quality of life, renal failure, and Roy's Adaptation Model. Only research articles that pertained to adult patients on hemodialysis and that were in English were reviewed. Each report was evaluated for the description of sexual dysfunction and its relevance to each adaptive mode as described by the Roy Adaptation Model. The guiding questions for this search were: 1) How does nursing, allied health and medical literature describe sexual problems and the management of sexual problems associated with hemodialysis, and 2) how does the literature describe the effect of sexual changes and concerns on the physiologic, self-concept, role and interdependence adaptive modes of adult patients on hemodialysis?

### Demographic and Methodological Findings

Thirty-one (31) research reports met the inclusion criteria for reports specific to descriptions of sexual dysfunction in the adult patients on hemodialysis (see Table 1). Twenty-seven reports (87%) were found in nephrology journals that were specific to the study of renal disease and dialysis. Six reports (20%) were found in nursing journals (four of which were again specific to nephrology). The majority of the studies (68%) were conducted in countries other than the United States. Male subjects were included in 28 (90%) of studies and were the only subjects in 17 (55%) of studies. Women were included in 13 studies (42%) and were single subjects in only 2 of the studies. Quantitative methodologies were utilized in 27 studies (87%). A "critical interpretive" or qualitative methodology was described in only one report. Three case studies with a single adult subject on hemodialysis were also included in this review. Diverse meth-

ods of analysis and findings were noted among all reports.

### Findings of Interventions Relevant to Sexual Dysfunction in Patients on Hemodialysis

Few reports addressed nursing interventions related to sexual health, despite the nursing standard set forth in 1988 by the American Nephrology Nurses' Association to promote patient "expression of satisfaction with sexuality" (Brennan et al., 1988). Only six studies focused on education or the desire for education pertaining to sexual dysfunction in patients on hemodialysis. Several of the studies acknowledged that the nurse is frequently the initial health care professional to elicit the patient's concern regarding sexual dysfunction (Milde, Hart, & Fearing, 1996; Milde, Hart, Fearing, & Cox, 1994; Zarifian, 1994). The focus of each article varied, but the nurses' lack of knowledge and discomfort were acknowledged as factors that limited assessment, patient education, and other management strategies related to sexual dysfunction.

An important addition to the study by Milde et al. (1996) was the question of whether patients desired to or received information regarding sexuality and fertility problems. Seventy six percent (76%) of the 135 male and female participants indicated never having received information regarding sexual changes or concerns at any time since starting dialysis. Additional comments from patients related to receiving information indicated "relief to learn that sexual dysfunctions are not uncommon with dialysis therapy and a desire to know additional information" (Milde et al., 1996, p. 312).

An earlier survey of patient sexual education programs in 36 dialysis centers and 37 transplant centers revealed that only 33% of major dialysis centers in the U.S. had educational programs that included sexuality content (Milde et al., 1994). Findings also revealed that the education related to sexuality primarily consisted of physiological

versus psychosocial aspects of sexual dysfunction.

Specific training for nephrology nurses to improve sexuality assessment and management skills was not the specific focus of any of the studies. An investigation of the perceptions of patients on hemodialysis of barriers and facilitators to reporting or expressing sexual changes and concerns to health care providers was not found in any of the studies. In addition, the perceptions of patients on hemodialysis about health care provider roles relevant to experiences of sexual changes and concerns associated with hemodialysis were also not found in any studies.

### Findings Relevant to the Effect of Sexuality Changes on the Adaptive Modes

Twenty-four (77%) of the reports reviewed detailed sexuality changes related to the physiologic mode. Less research focused on the self concept, role, and interdependence adaptive modes. The following sections will detail relevant information found in the reviewed reports under the headings of the adaptive modes most affected.

#### Physiologic Mode

Thirteen reports (42%) described physiologic difficulties such as erectile dysfunction (ED) and ejaculation problems in men (Ali et al., 2005; Arslan et al. 2002; Aslan et al., 2003; Bellinghieri et al., 2004; Chen, Mabjeesh, Greenstein, Nadu, & Matzkin, 2001; Diemont et al., 2000; Milde et al, 1996; Naya et al. 2002; Rosas et al, 2001; Rosas et al., 2003; Sahin et al., 2004; Seibel, Poli De Figueiredo, Teloken, & Moraes, 2002; Soykan, A. et al., 2005; Turk et al., 2001; Wu, Lin, & Jeng, 2001). Younger men (less than 50 years) were noted to be less likely to develop sexual dysfunction after the initiation of dialysis than older men (Naya et al, 2002; Rosas et al, 2001). Rosas et al. (2003) indicated that the diagnosis and treatment of ED may improve the quality of life. Treatment with pharmacology agents such as

**Table 1**  
**Articles Reviewed**

Author/ Date	Journal	Country & Sample	Research Design & Purpose	Outcomes	Adaptive Modes
Ali et al., 2005	International Journal of Impotence Research	Egypt: 75 men on hemodialysis (mean age 41, range 20-69yrs); 948 healthy male controls	Experimental: Identify prevalence erectile dysfunction (ED) in males on hemodialysis- compared to healthy males	Increased ED in males on hemodialysis (p < 00.1); Increased ED in older males on hemodialysis (p < 0.01)	Physiologic
Arslan et al., 2002	International Journal of Impotence Research	Turkey: 187 men on hemodialysis (mean age 49, range 22-79 yrs)	Non-experimental - correlational: Determine prevalence of ED & sexual function; disclosure of sexual problems to physicians	Increased ED older males on hemodialysis (p < 0.01); decrease frequency of intercourse; minimal disclosure of sexuality problems (1%, n = 16)	Physiologic Self-concept
Aslan et al., 2003	Urologia Internationalis	Turkey: 98 men on hemodialysis (mean age 46, range 30-69yrs)	Non-experimental - correlational: Determine prevalence of premature ejaculation and impact on QOL including sexual QOL	Premature ejaculation prevalent disorder in males on hemodialysis*; decrease satisfaction sexual life & sexual relationship*	Physiologic Self-concept Interdependence
Auer et al., 1990	Scandinavian Journal of Urology & Nephrology Supplementum	United Kingdom (UK): Patients: 12 on hemodialysis & 18 on peritoneal dialysis (PD) (17 males, 13 females, mean age 72, range 66-78 yrs)	Non-experimental - correlational: Assess age, medical and social risk factors and renal replacement treatment method on perceived QOL including sexual satisfaction	Report of markedly decrease sexual satisfaction both groups (p < 0.01)	Self-concept Interdependence
Bellinghieri et al., 2004	Seminars in Nephrology	Italy: 20 men on hemodialysis; control group of 6 healthy men	Experimental: Evaluate pathogenic mechanisms of ED	Evidence of pathogenic changes of corpora cavernosa in males on hemodialysis *	Physiologic
Beusterien et al., 1996	Journal of the American Society of Nephrology	USA: 520 patients on hemodialysis (85%) and peritoneal dialysis with established EPO treatment (47% male, 53% female, 43% Black, 52% White/Hispanic); 484 on hemodialysis (91%) and on peritoneal dialysis with new EPO treatment (52% male, 48% female, 44% Black, 53% White/Hispanic)	Experimental: Determine effect of new vs. old/ established treatment with Epo on QOL including sexual QOL	Increased report of sexual satisfaction & sexual interest; increase social functioning & social life (p < 0.05 both groups)	Physiologic Self-concept

\*Note: P value not indicated.

**Table 1 (continued)**  
**Articles Reviewed**

Author/Date	Journal	Country & Sample	Research Design & Purpose	Outcomes	Adaptive Modes
Camsari et al., 1999	Journal of the International Society for Peritoneal Dialysis	Canada: 26 patients on hemodialysis (16 men, 10 women); 47 on peritoneal dialysis (26 men, 21 women)	Non-experimental - correlational: Determine contribution of psychological factors on sexual function	Sexual desire disorder – common sexual dysfunction among both sexually active patients on hemodialysis and peritoneal dialysis*	Physiologic Self-concept
Chen et al., 2001	The Journal of Urology	Israel: 35 men (34 on hemodialysis, 1 on peritoneal dialysis, mean age 61, range 47-72 yrs) and female partners	Non-experimental - correlational: Evaluate effect of sildenafil citrate on ED & partner satisfaction	Safe & effective treatment of ED;* increased report partner satisfaction	Physiologic
Curtin et al., 2002	Nephrology Nursing Journal	USA: 147 men & 160 women on hemodialysis; 13 (4.2%) Hispanic; 152 (49.5%); Caucasian; (mean age 58.2, range 19-90 yrs)	Non-experimental - correlational: Evaluate frequently experienced physical symptoms in patients on dialysis	13 of 17 frequent physical symptoms clustered around fatigue/sleep (.78); sexual concerns (.84); or mobility (.75), (p < .01).	Physiologic
Diemont et al., 2000	American Journal of Kidney Disease	Netherlands: 400 dialysis; 300 patients with renal transplant (male & females)	Non-experimental - correlational: Subjective evaluation of sexual function	Increased SD in the hemodialysis group*	Self-Concept
Fearing 1992	ANNA Journal (Now Nephrology Nursing Journal)	USA: one male	Case Study: response of 35 year married male to EPO therapy	Report of increased sexual intercourse and QOL	Physiologic Self-concept Interdependence
Iacovides et al., 2002	Aging – Clinical & Experimental Research	Greece: 56 patients on HD (30 men, 26 women; mean age 57, (range 23-81 yrs); 26 on PD	Non-experimental - correlational: Investigate reported relationship between age, emotional state, life satisfaction, sexual functioning & method of dialysis	No significant differences	Self-concept
Kutner et al., 2000	Ethnicity & Disease	USA: 183 African Americans on hemodialysis (95 men, 88 women); 125 Caucasian (57 men, 68 women); mean age 69 (range 60-87 yrs)	Non-experimental - correlational: evaluate association of ethnicity with kidney disease symptoms and effect of HD treatment on older patients	Older whites more likely to report SD (p = .001); males more likely to report SD than females (p = 0.0001).	Self-concept

\*Note: P value not indicated.

**Table 1 (continued)  
Articles Reviewed**

Author/Date	Journal	Country & Sample	Research Design & Purpose	Outcomes	Adaptive Modes
Lawrence et al., 1997	Nephrology, Dialysis, Transplantation	UK: 13 men on hemodialysis; 52 men on peritoneal dialysis (mean age 53)	Experimental: Determine reason for ineffectiveness of EPO & anemia treatment on sexual function for male patients on hemodialysis and peritoneal dialysis compared to non recipients of EPO	Increased testosterone & sex hormone binding globulin found in patients on hemodialysis who had continued SD (p < 0.001).	Physiologic
Milde et al., 1994	Dialysis & Transplantation	USA: 36 dialysis centers; 37 transplant centers	Descriptive survey: survey of educational programs in dialysis and transplant centers to assess inclusion of sexuality content	Sexuality content included in 33% of dialysis centers and 78% of transplant centers; content primarily physiologic	Physiologic Self-concept
Milde et al., 1996	ANNA Journal (Now Nephrology Nursing Journal)	USA: 79 males; 56 women; 95% Caucasian, 5% African American (inclusion of partners)	Non-experimental - correlation: Identify frequency of sexual and fertility dysfunctions; satisfaction with sexual relationships; identify if patients desire or receive information pertaining to sexual problems	Report of decreased sexually active (76%), dissatisfaction with sexual relationship (60%), no instruction regarding SD (76%) since initiation of dialysis	Physiologic Self-concept Interdependence
Naya et al., 2002	International Journal of Impotence Research	Japan: 174 men on hemodialysis (131 without diabetes; 43 with diabetes; (mean age 56, range 22-69 yrs); 1133 healthy controls	Non-experimental - correlational: Determine prevalence of ED	Increase ED in male patients on hemodialysis; greater increase for males 40 yrs and older (p < 0.0001)	Physiologic
Peng et al., 2005	Kidney International	Taiwan: 143 females, (mean age 48, range 22-81 yrs); 62 healthy controls	Non-experimental - correlational: Identify prevalence & influencing factors of SD in female patients on hemodialysis	Sexual dysfunction in female patients on hemodialysis associated with increased age (p < 0.001); depression (p < 0.001); dyslipidemia (p < 0.001); & poor QOL (p = 0.001)	Physiologic Self-concept
Polaschek 2002	Journal of Advanced Nursing	New Zealand: 6 Caucasian men (age 20s – 60s)	“Critical interpretative methodology”: Assess living experience of men on home hemodialysis	Younger men report greater inability to sustain partner relationship	Self-concept Interdependence

\*Note: P value not indicated.

**Table 1 (continued)**  
**Articles Reviewed**

Author/Date	Journal	Country & Sample	Research Design & Purpose	Outcomes	Adaptive Modes
Rosas et al., 2001	Kidney International	USA: 302 men -179 (59%) African Americans; 9 (2.6%) Hispanic	Non-experimental - correlational: Determine prevalence and determinants of ED in men on hemodialysis	High prevalence of ED in men on hemodialysis; * higher prevalence associated with increasing age and diabetes*	Physiologic
Rosas et al., 2003	Kidney International	USA: 302 men – 172 (59%) African Americans; 9 (2.6%) Hispanic; (mean age 59)	Non-experimental - correlational: Evaluate impact of ED on QOL	ED associated with poorer social interaction ( $p < 0.001$ ), social functioning ( $p = 0.005$ , and role limitations ( $p = 0.01$ )	Physiologic Self-concept Role
Sahin et al., 2004	Transplantation Proceedings	Turkey: 51 men, (mean age 51, range 30-73yrs);	Pre-experimental: Determine efficacy of sildenafil citrate on ED in males on hemodialysis	Sildenafil citrate safe & effective in 74.5% of subjects	Physiologic
Sayag et al., 1990	Nephron	Israel: 31 male patients on hemodialysis who did not have diabetes; 31 male patients with transplants	Non-experimental - correlational: Evaluate psychosocial adjustment & psychological distress including sexual interrelationship	Poorer psychosocial adjustment group on hemodialysis (non-significant finding)	Self-concept Interdependence
Seibel et al., 2002	Journal of American Society of Nephrology	Brazil: 41 men (21 placebo, 20 sildenafil); 46 – 49 yrs.	Experimental: Evaluate effect of sildenafil on ED in males on hemodialysis	Sildenafil associated with improved response ( $p < 0.001$ )	Physiologic
Soykan et al., 2005	International Journal of Impotence Research	Turkey: 25 men; 18 women; (mean age 41, range 25-65 yrs)	Pre-experimental: six month prospective study of SD during HD	SD common in patients on hemodialysis, does not remit with dialysis (non significant); SD associated with depression in female patients on hemodialysis ( $p = 0.003$ )	Physiologic Self-concept
Suzuki et al., 1992	Japanese Journal of Nephrology	Japan: 13 men (mean age 43 yrs)	Quasi-experimental: Evaluate effect of EPO on sex hormones & sexual functioning	Improved sexual function (non significant); increased testosterone, FSH & LH ( $p < 0.05$ )	Physiologic

\*Note: P value not indicated.

Table 1 (continued)  
Articles Reviewed

Author/ Date	Journal	Country & Sample	Research Design & Purpose	Outcomes	Adaptive Modes
Tanyi, 2002	MEDSURG Nursing	USA: one female	Descriptive Case Study: African American female experience with HD & PD over 20 yrs	Report of altered body image and decreased sexual attractiveness asso- ciated with dialysis treatment plan	Self-concept
Toorians, et al., 1997	Nephrology Dialysis Transplantation	Netherlands: 88 men, 44 women (23 on HD, 21 on PD, 33 with transplants); 22 con- trols);	Experimental: Evaluate effect of mode of renal replacement thera- py and biochemi- cal/endocrine vari- ables on reported sexual functioning	Hypoactive sexual desire disorder greater in dialyzing men ( $p < 0.01$ ); reported severity of sexual dysfunction had no relationship to duration of dialy- sis	Physiologic Self-concept
Turk, et al., 2001	Nephrology, Dialysis, Transplantation	Turkey: Men - 35 on hemodialy- sis, 15 on peritoneal dialysis; (mean age 48)	Non-experimental - correlational: Evaluate effect of sildenafil treatment on ED in males on hemodialysis and peritoneal dialysis	Sildenafil effective treatment in both dialysis groups ( $p < 0.001$ )	Physiologic
Wu, et al., 2001	Scandinavian Journal of Urology & Nephrology Supplementum	Taiwan: 25 men on hemodialy- sis (mean age 44); 15 men with ESRD but not on dialysis (mean age 49); 15 healthy men (mean age 47)	Experimental: Evaluate effect of EPO on sex hor- mone level & sexual function	Increased testos- terone ( $p < 0.001$ ) & sexual function* in men on hemodialysis on EPO	Physiologic
Zarifian, 1994	ANNA Journal (Now Nephrology Nursing Journal)	USA: one male	Descriptive Case Study: 36 yr married male – focus on sexual function and EPO therapy	Report of increased sexual interest post EPO therapy and after inclusion of spouse in counsel- ing	Physiologic Self-concept Interdependence

**Note:** P value not indicated.

sildenafil was suggested as a safe method to correct ED (Chen et al., 2001; Sahin et al., 2004; Seibel et al., 2002; Turk et al., 2001). Chen et al. (2001) were the only investigators to include female partners in the evaluation of the effect of sildenafil citrate on ED and sexual satisfaction. Erythropoietin was also found to improve sexual dysfunction in both male and female patients on hemodialysis (Beusterien et al., 1996; Fearing, 1992; Lawrence et al., 1997; Suzuki, Murakami, Ichihara, & Saruta, 1992; Wu et al., 2001; Zarifian, 1994).

Research findings related to the effect of sexual dysfunction on the physiologic mode for both male and female patients on hemodialysis included an association of frequent physical symptoms in male and female patients on dialysis to fatigue/sleep, mobility, and sexual concerns (Curtin, Bultman, Thomas-Hawkins, Walters, & Schatell, 2002). Toorians et al. (1997) assessed the prevalence of self-reported sexual dysfunction in male and female patients on hemodialysis, peritoneal dialysis, and those who had received

a kidney transplant. Findings revealed that men receiving dialysis suffer more from “hypoactive sexual desire disorder, sexual aversion disorder, and inhibited male orgasm” than men with kidney transplantation or when compared to a group of men with rheumatoid arthritis (p. 2661). Women receiving hemodialysis were found to suffer more from hypoactive sexual desire disorder, sexual arousal disorder and decreased orgasm than the control, KT, men HD and PD, or female PD groups. A higher association of sexual dysfunction with

increased age and dyslipidemia was also indicated in female patients on hemodialysis (Kutner, Brogan, Fielding, & Hall, 2000; Peng et al., 2005).

### Self-Concept Mode

The effect of sexual dysfunction on the self-concept mode was addressed in 19 reports (61%); however, only 4 reports had a single focus on this mode. The majority of studies related to this mode used quantitative tools to elicit self-reports of sexual changes or concerns that negatively affect the personal sense of self, sexual satisfaction, and quality of life of patients on hemodialysis (Iacovides et al., 2002; Milde et al., 1996; Tanyi, 2002). Milde et al. (1996) conducted research to identify sexual and fertility dysfunctions and relationship satisfaction experienced by male and female patients on dialysis. Findings support that sexuality changes such as altered body image is one of the most stressing life factors for the patient on hemodialysis. An additional significant finding in one study ( $n = 187$ ) was that despite the effect of sexual changes on the self-concept mode, only 1% of male patients on dialysis indicated reporting sexual problems to physicians (Arslan et al., 2002). A similar study related to female patients on hemodialysis was not found.

Findings related to the effect of sexual dysfunction on the self-concept mode included reports of decreased personal desire and satisfaction, (Camsari et al., 1999; Milde et al., 1996), feeling of depression or psychological distress (Zarifian, 1994), body image alteration, decreased self-perception, and decreased sexual attractiveness (Tanyi, 2002). Sexual concerns specific to women patients on hemodialysis included greater reluctance to participate in sex compared to healthy controls and to peritoneal patients (Camsari et al., 1999).

### Role Function Mode

None of the reports had a single focus on the effect of sexual dysfunction on the role function mode. Only one report suggested the relationship

of decreased social interactions, social functioning, and role limitations to sexual dysfunction (Rosas et al., 2003). Female participants on hemodialysis were not included in this study. Research was not found that evaluated the relationship of sexuality changes and the effect on social roles such as head of household, employee, etc.

### Interdependence Mode

Reports relevant to the interdependence mode were specifically reviewed to evaluate the effect of sexual dysfunction on the relationship between the HD patient and the patient's significant other. No reports were found that only addressed this issue; however, a relationship between sexual dysfunction and distance in partner relationships was indicated in seven reports (Auer et al., 1990; Chen et al., 2001; Milde et al., 1996; Milde et al., 1994; Polaschek, 2002, Sayag et al., 1990; Zarifian, 1994). Only two of these reports included female participants (Auer et al., 1990; Milde et al., 1996). The importance of partner involvement in the assessment and discussions of sexual dysfunction was also recommended by Zarifian (1994), Milde et al. (1994), Milde et al. (1996), and Fearing (1992).

Polaschek (2002) conducted a qualitative study using a "critical interpretative" methodology to examine the experience of 6 Caucasian men living with ESRD and on home hemodialysis. Men in this study ranged from 20 to 60 years. Findings associated with the theme "altered interrelationship between autonomy and dependence" found younger men to be more independent, but unable to develop or sustain relationships with an intimate partner secondary to the dialysis regime (Polaschek, 2002, p. 47). Older men in the study also reported to have altered, but overall well-established and stronger partner relationships.

### Summary

This descriptive narrative literature review was guided by Roy's

Adaptation Model to identify descriptions of sexual changes or concerns and the effects on the physiologic, self-concept, role or interdependence adaptive modes of patients on hemodialysis. The research indicated that sexual problems are common for these patients and may affect all of the adaptive modes. A holistic approach of assessment or management related to all four adaptive modes was not found in any of the studies. The physiologic adaptive mode was identified as being most affected by sexual change or concerns followed by the self-concept mode.

Reports focusing on the physiologic mode primarily identified difficulties with erectile dysfunction in men. Interventions included pharmacological or other physiological manipulations. There was little focus on nonphysiological interventions such as education and counseling.

Most of the findings related to the effect of sexual changes or concerns on the self-concept mode were from studies that used quantitative measures to elicit self-report of sexual changes or concerns. The personal sense of self or quality of life of patients on hemodialysis was found to be negatively affected by sexual changes and concerns. Adaptive problems associated with this mode included decreased personal desire and satisfaction, feeling of depression or psychological distress, body image alteration, and decreased sexual attractiveness.

Sexual dysfunction was noted to be associated with decreased social interactions, social functioning, and role limitations in male participants. However, few studies in this review focused on the effect of sexual dysfunction on the role adaptive mode. The effect of sexual dysfunction on roles of women participants was not reported in any studies.

Interdependent adaptive problems were also addressed in limited studies. Findings indicated a negative alteration in intimate partner relationships, especially among younger men on hemodialysis. Limited inclusion of information from women participants

on hemodialysis or partners was noted.

It is also significant to note that the majority of studies were conducted outside the United States. Studies pertaining to the psychological effect of sexual dysfunction in African American and Hispanic patients in the U.S. were also minimal, despite the high incidence of ESRD and hemodialysis experience by these patients.

### Nursing Research Implications

The absence of a healthy sexual expression is considered to be common for patients on hemodialysis. This absence may have a significant effect on adaptive or coping processes, thus affecting the patient's role in the hemodialysis treatment plan. Research is needed to better understand the experiences of sexuality changes and concerns by male and female patients on hemodialysis and the effect on self, personal relationships, and family-society roles. Research must examine the patients' perceptions of barriers and facilitators to expressing sexual changes or concerns to health care providers and the intervening roles of health care providers. Partners of patients on hemodialysis must also be involved in research related to sexuality and relationship issues. The inclusion of ethnically diverse participants in more research studies is equally important, particularly those with higher incidence of ESRD and hemodialysis.

Research must also explore the role of nurses related to assessment and interventions relevant to sexual dysfunction in patients on hemodialysis. As previously indicated, the nurse is frequently the initial health care professional to elicit patients' concerns regarding sexual changes or concerns. It is essential that nurses have the training and skills to appropriately assess and intervene to promote healthy sexual expressions by patients on hemodialysis. Roy's Adaptation Model provides a framework to identify the effect of sexual changes and concerns on the patients' adaptive or coping processes. Assisting

patients on hemodialysis to maintain a healthy sexual expression is a nursing standard that must not be ignored. The absence of a healthy sexual expression may significantly affect the adaptive processes of these patients.

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## ANSWER/EVALUATION FORM

### Narrative Literature Review: Sexual Dysfunction in the Hemodialysis Patient Merry Stewart, MSN, RN, APRN

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- Answer the open-ended question(s) below.
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\_\_\_\_\_  
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**GOAL**

To relay information found in a review of the literature on sexual dysfunction in patients on hemodialysis.

#### New Posttest Format

Please note that this continuing education activity does not contain multiple-choice questions. We have introduced a new type of posttest that substitutes the multiple-choice questions with an open-ended question. Simply answer the open-ended question(s) directly above the evaluation portion of the Answer/Evaluation Form and return the form, with payment, to the National Office as usual.

#### Evaluation

- By completing this offering, I was able to meet the stated objectives
  - Describe the 4 adaptive modes used as a framework in Roy's Adaptation Model.
  - Contrast the literature reports focusing on sexual dysfunction on physiologic, self-concept, role, or interdependence modes of patients on hemodialysis.
  - Contrast the patient's stated need for discussion about concerns with sexual dysfunction with their perception of the caregiver's willingness to engage in that discussion.
  - Suggest nursing research needed in the area of sexual dysfunction in patients on hemodialysis.
- The content was current and relevant.
- This was an effective method to learn this content.
- Time required to complete reading assignment: \_\_\_\_\_ minutes.

	Strongly disagree				Strongly agree
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	
1	2	3	4	5	

I verify that I have completed this activity \_\_\_\_\_  
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