

SPOUSE MARITAL ADJUSTMENT AND PATIENT DIETARY ADHERENCE IN CHRONIC HEMODIALYSIS: A COMPARISON OF AFRO-AMERICANS AND CAUCASIANS†

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This study investigated racial differences in the relationship between spouse marital adjustment and dietary adherence of chronic hemodialysis patients. Sixty-eight adult patients and their spouse were subjects. Fifty-two percent of the patients were Caucasians while 48% were Afro-Americans. Spouses completed the Locke-Marital-Questionnaire (LMQ) and provided demographic data pertaining to their patient spouses. The patients' predialysis potassium levels (indices of food intake compliance) for the previous three months were matched with the respective questionnaires. Afro-American spouses, especially males, evidenced significantly lower marital satisfaction than Caucasian spouses. Afro-American female patients seemed to be most compliant as far as food intake was concerned. Although the spouse LMQ score was negatively correlated with interdialysis weight gain, Afro-Americans who generally scored lower on the LMQ did not differ from Caucasians in so far as their adherence to the dietary regimen was concerned. Implications for improving quality of life of hemodialysis couples in general, and Afro-Americans in particular are discussed.

KEY WORDS: Marital adjustment, chronic illness, hemodialysis, adherence, compliance, racial differences.

INTRODUCTION

As poor health decreases an individual's ability to fulfill one's family role, marital relationships are likely to face potential stress and alteration. Hafstrom and Schram (1984) demonstrated that mean scores for wife's satisfactions with marriage and with several other husband-wife interactions were significantly lower for wives with chronically ill husbands.

In recent years, health care professionals have begun to give increased attention to the quality of life that chronically ill hemodialysis patients experience (Torrens, 1978; Tucker, Mulkerne and Ziller, 1982). Research studies indicate that many of these patients experience psychosocial adjustment problems and life style changes in association with the limitations of their illnesses and the long-term dietary and

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medical regimens often necessary for maintenance of life (Abram, 1968; De-Nour and Czaczkes, 1972; Goodey and Kelly, 1967). Spouses and other family members are also affected by the patient's chronic illness and seem, in turn, to influence the patient's quality of life (Abram, 1968; Goodey and Kelly, 1967; Huber and Tucker, 1983). Bouras, Vanger and Bridges (1986) have also shown the effects of illness on patient spouses and called for more attention to be given to the spouses' needs for support.

A disproportionately high number of hemodialysis patients in America are black (Gutman, Stead and Robinson, 1981). Because most Afro-Americans have had different lifestyles, family orientations, and health care experiences to Caucasians (Hill, 1972; Jenkins, 1982; Tucker, James and Turner, 1985), their marital relationships subsequent to becoming hemodialysis patients might also be different. Awareness of these differences is important when planning interventions such as patient group counseling and marital counseling to improve the quality of life of racially different patients and their families. Yet, no studies have examined racial differences among spouses of hemodialysis or any other chronically ill patients with regard to marital adjustment variables.

A deficit in social and familial support such as exists in the lives of people living alone was shown to be related to the tendency to miss medication doses by chronically ill patients (Lorish, Richards and Brown, 1989). It is, thus, conceivable that maritally maladjusted spouses avail their patient spouses with less support and less commitment to the maintenance of the patients' dietary regimen than better adjusted spouses do.

Indeed, the importance of attending to spouse marital adjustment in chronic illness is further emphasized by the fact that good familial support systems had been found to be positively associated with patient psychosocial adjustment and adherence to the medical regimen (Gutman, 1981; Goodey and Kelly, 1967). Brackney (1979), who looked at the impact of home hemodialysis on the marital dyad, suggested the research should shift its focus from the patient alone to include assessment of the marital relationship and the psychological well-being of the spouse. Somer and Tucker (1988) have indeed demonstrated that lower levels of interdialysis weight gain, indicating fluid intake adherence, were related to higher spouse marital adjustment scores.

The purpose of this research was to examine spouse marital satisfaction as well as patient dietary adherence of racially different patients.

METHOD

Subjects

Sixty-eight chronic hemodialysis patients and their spouses were subjects. The patients dialyzed at one of five out-patient centers. Seventy-two percent of the patients were males, 28% were female. Fifty-two percent of the patients were Caucasians and 48% were Afro-Americans. Ages of patients ranged from 30 to 79 ($M = 59$, $S.D. = 11$), and of spouses from 34 to 79 ($M = 61$, $S.D. = 11$), the patients tenure on dialyses varied from six months to 15 years ($M = 43$ months, $S.D. = 31$). There were no interracial couples in the study. The patient sample was controlled for residual kidney function and complexity of medical regimen. Illiterate subjects were excluded from the study.

Assessment Instruments

Two paper and pencil instruments were administered to spouses of patients. They were (1) the short form Locke Marital Adjustment Questionnaire (LMQ) (Locke, 1951) and (2) a demographic questionnaire used to assess such characteristics as age, gender, race and tenure on dialysis.

Patient dietary adherence was assessed through the patients' interdialysis weight gain (W) at each treatment (a measure of fluid intake adherence) and the monthly serum potassium level (a measure of food intake adherence) over the three months prior to the study (K). These measures are widely used as direct biological assessments in haemodialysis research, and are here employed as summative indicators of these two aspects of adherence behaviour.

Procedure

Five arbitrarily selected outpatient haemodialysis treatment centres were contacted about the study. The medical directors of each center agreed to solicit participation of married patients and their spouses. The couples were told that this research sought to examine the spouse's experience and that the results might help find some new ways of improving quality care in hemodialysis. Anonymous questionnaires were directly handed to spouses and patients, with the instruction to return them sealed in the provided envelope on their next appointment. After completed questionnaires had been returned, the centers' social workers retrieved the patients' biomedical data and enclosed them with the corresponding research questionnaires. The complete data packages were not returned to the investigators before all patient and spouse names were deleted to ensure patient-physician confidentiality.

RESULTS

While the mean LMQ score for a normal sample is 109.3, $S.D. = 16.3$ (Kimmel and van Der Veen, 1974), the current sample is somewhat lower ($\bar{X} = 106.5$, $S.D. = 16.8$). On the average, the current sample falls within an acceptable range for inter-dialysis fluid weight gain (1.5–5.5 lbs.), as well as within an acceptable range of pre-dialysis potassium levels (3.3–5.5 mmols/litre) (see Table 1).

Two-way analyses of variance were applied to the data to determine race and sex differences in spouse marital adjustment and dietary adherence among patients. No significant differences were found when dietary adherence levels of Afro-Americans and Caucasians were compared and when those of males and females were compared.

A significant interaction between race and sex was observed when time on dialysis (TOD) was the dependent variable ($F(3,65) = 5.47$, $P < 0.05$). It seems the effect is due to the fact that Caucasian males were longer on dialysis ($F(1) = 4.05$, $P < 0.05$). A seemingly larger difference between Afro-American and Caucasian females was not significant because of the small number of Afro-American females in this sample ($N = 7$). No significant relationships were found between TOD and LMQ or between W and K scores. A Pearson moment correlation of -0.4 ($P < 0.001$) was found between interdialysis weight gain (W) and the spouse marital adjustment score (LMQ).

Table 1 Patient time on dialysis gain (TOD), inter-dialysis fluid weight gain (W), pre-dialysis serum potassium level (K) and spouse marital adjustment (LMQ) by race and sex

	Patient's Race and Sex								
	Caucasian		Afro-American			Male	Female		
	both sexes (n=40)	Male (n=28)	Female (n=12)	both sexes (n=29)	Male (n=22)	Female (n=7)	(n=50)	(n=19)	
Patient TOD (months)	45.02	48.57	36.75	39.62	33.00	60.43	41.72	45.47	
Patient W (lbs.)	4.35	4.38	4.27	4.75	4.59	5.26	4.48	4.63	
Patient K (mmols/litre)	5.04	4.88	5.40	4.98	5.07	4.67	4.96	5.13	
Spouse LMQ	110.48	108.42	115.25	101.00	104.36	90.42	106.64	106.10	

Afro-Americans scored lower on the LMQ ($\bar{X} = 101$) than Caucasians ($\bar{X} = 110.5$). The mean scores of the Afro-American spouses are more than one standard deviation below the mean of the LMQ normative sample (Male $\bar{X} = 112$, Female $\bar{X} = 108$), thus indicating marital dissatisfaction.

Significant race and race \times sex effects were found when Afro-American and Caucasian spouse marital adjustment scores were compared, $F(1) = 10.90$, $P < 0.001$ and $F(1) = 5.63$, $P < 0.005$, Figure 1 describes the significant interaction between the race and sex.

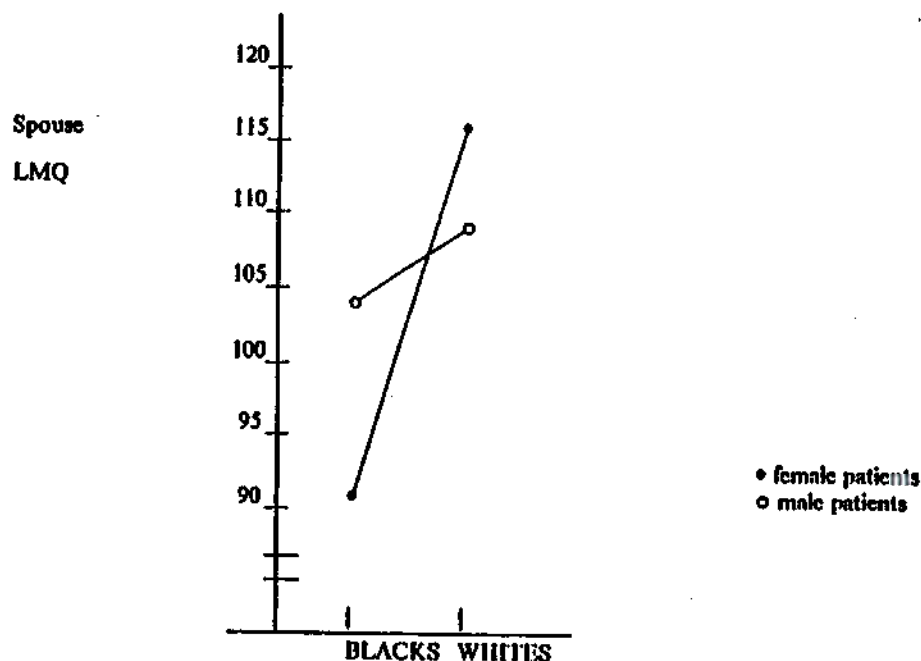


Figure 1 Spouse marital adjustment (LMQ) by race and sex.

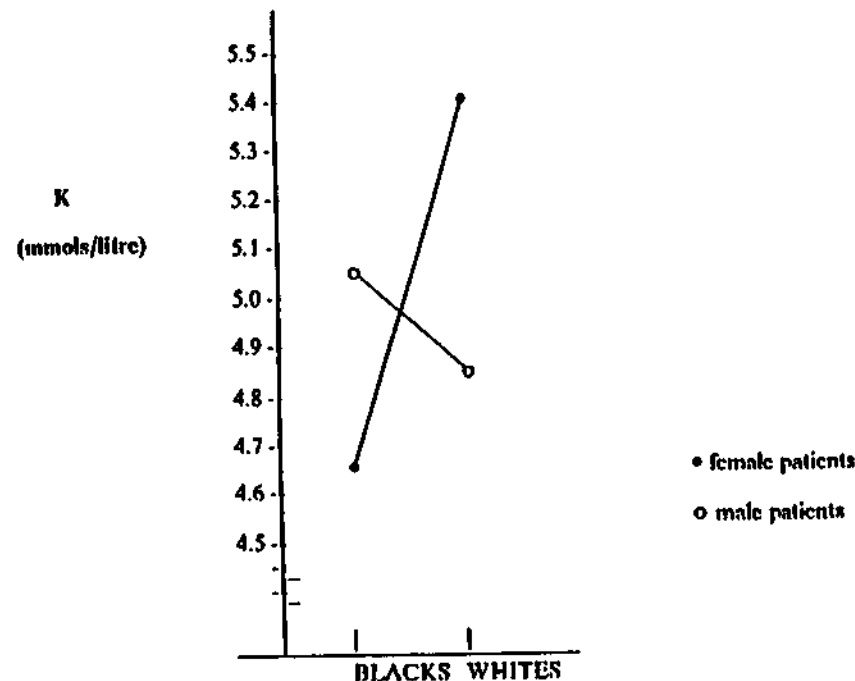


Figure 2 Pre-dialysis potassium level (K) by race and sex.

A further analysis for the purpose of discovering the source of that interaction indicated that Afro-American male spouses differed most by scoring significantly lower on the LMQ ($\bar{X} = 90$) than Caucasian male spouses ($\bar{X} = 115$) $F(1) = 18.82$, $P < 0.004$.

Figure 2 describes a significant interaction between race and sex when pre-dialysis potassium (K) level is the dependent variable, $F(1) = 8.40$, $P < 0.05$ (see Table 2).

Table 2 Analyses of variance of the effects of patient race and sex on spouse marital adjustment (LMQ) and food intake compliance (K)

Source of variation	F-value	
	LMQ	K
Race	10.90***	2.82
Sex	0.66	0.14
Race \times Sex	5.63**	8.40*

* $P < 0.05$; ** $P < 0.005$; *** $P < 0.001$.

This interaction was primarily a result of the fact that Afro-American females were significantly more compliant (lower K) than Caucasian females, in terms of consumption of high potassium food ($F(1) = 6.46, P < 0.05$).

DISCUSSION

The significant relationship between patient adherence and spouse marital adjustment is in general agreement with Brackney (1979), Litman (1974), and Pratt (1976) and corroborates previous findings by Somer and Tucker (1988) who have all perceived the family as the most important social context in which illness occurs and is dealt with. The findings of this study support the findings of Mathis (1964) and Lynch *et al.* (1976, 1977) who have shown that negative or upsetting interactions among family members may have severe negative effects on health and the outcome of medical care. An interactive model of understanding the relationship between spouse marital satisfaction and patient adherence appears to be a plausible one.

The finding of significantly lower marital adjustment among Afro-American patients' spouses than Caucasian patients' spouses is consistent with reports of the relative marital adjustment of Afro-American and Caucasians in the general population (Tucker *et al.*, 1985). Of particular interest is that Afro-American male spouses evidenced significantly lower marital adjustment than Caucasian male spouses. Worthwhile noting is the fact it was the Afro-American female patients (whose spouses were the least adjusted) who have shown the best food intake adherence (see Figure 2).

A possible explanation of this finding may be that Afro-American males reacted differently to the conditions created by their wives' sickness. History attests to the position of the Afro-American woman in the family, it has traditionally been one of being both a working breadwinner and a homemaker. One may assume that within the ranks of the lower SES Afro-American subjects, which this study has investigated, some of the traditional sex-roles are still prevalent. For Black males, then, it may have been much more difficult than for the rest of the sample to adjust to an ailing spouse whose energies were shown to be directed towards food adherence rather, perhaps, than to the traditional wife role. One other finding to note in this context is that although the LMQ score was negatively correlated with interdialysis weight gain, Afro-Americans, who generally scored lower on the LMQ, did not differ from Caucasians as far as their adherence to the dietary regimen was concerned.

Three possible explanations for this apparent discrepancy could be considered. The first is that, despite the greater marital dissatisfaction some of the Afro-American spouses might have experienced in conjunction with serious sickness that has afflicted their spouse, they still continued to accept and support the patients and their compliant behaviour. The second explanation is that Afro-American patients, and specifically Afro-American female patients, may not have expected as much of their spouses in response to their sickness as Caucasian female patients may have expected, and thus were less affected by their spouses' lower marital adjustment. It can be argued that Afro-American females were more independent of their spouses than Afro-American males were and thus, when the Afro-American female spouse ailed, her husband reacted with increased marital maladjustment, while she adjusted relatively well to her sick role and did not differ from her Caucasian counterpart in

her level of adherence. A third alternative explanation for this apparent paradox is that Afro-American females were more conforming and complying to a medical authority than the rest of the sample and that this tendency balanced the negative effects of their husbands' poor marital adjustment.

The correlational design of this study prohibits causal inferences. Also, the relatively small sample size, especially that of the Afro-American women sub-group, calls for special caution in the interpretation of the data and underscore the need for replication of the results. However, the medical and financial costs related to the problem of patient nonadherence and the apparent relationship between spouse marital maladjustment and patient nonadherence justify at least some tentative practical recommendations.

Since marital adjustment of spouses is likely to influence how well they will be able to execute the supportive roles for the patients' adjustment, and the new roles and responsibilities that illness brings, involvement of Afro-American spouses, especially males, in marital enrichment and support groups seem particularly indicated. Afro-American male spouses may need special help in adjusting to and learning nontraditional roles such as cooking and home management which may be more threatening to their masculine identity than to that of Caucasian males who may be less reliant on their masculine identity for positive self esteem (Jenkins, 1982).

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