

## Psychosocial Stress in Hansen's Disease: A Comparison with Other Chronic Illness Patients<sup>1</sup>

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Traditional views on psychosocial factors in illness suggest that people with particular illnesses share common personality types, life styles, or social problems. Such views are well illustrated in descriptions of the migraine personality (7) or the coronary prone personality (2). Nowhere is this type of thinking more prevalent, however, than in the literature on Hansen's disease (HD) or leprosy. Many would suggest that HD patients are a unique illness population, apart from other illness groups, whose needs require specialized psychosocial assessment and treatment (6). Factors hypothesized to account for this perspective include gaps in existing medical knowledge, the capricious nature of the disease, and the disabilities and deformities that can result from loss of sensation, injury, or inadequate care. Furthermore, in the past HD patients were typically cared for in institutions located away from cities, possibly resulting in the general public being uninformed or misinformed regarding the disease. These factors are thought to contribute to the stigmatization of HD patients and to the point of view that this is a mysterious and unique disease.

Recent studies attempting to empirically demonstrate unique characteristics of illness groups, however, have failed to provide support for the hypothesis that specific illness groups have particular personal characteristics. This literature suggests, instead, that all chronic illness patients share com-

mon psychosocial characteristics (e.g., increased medical utilization, reduced levels of adaptive behaviors, etc.) which are the general result of coping with a prolonged illness (8). In short, recent findings would indicate that chronic illness patients share more commonalities than differences.

One characteristic proposed as common in chronic illness is increased stress. Although a somewhat ambiguous term, stress has been conceptualized as events resulting in a set of nonspecific responses made by the body in response to a demand (5), and it is typically measured in terms of experienced life events. Research conducted by Holmes and Rahe (3), using life events to measure stress, suggests that illness and injury can be broadly predicted from knowledge of the individual's recently experienced stressors. This and other studies (1) provide support for the hypothesis that stress, as measured by life events, is correlated with the onset and exacerbation of a wide variety of illnesses. Despite extensive research, little or no data have been reported concerning stress in HD patients. It remains unclear as to the magnitude of stress experienced by HD patients and whether or not stress plays a role in the onset or exacerbation of the symptoms in HD.

The present study utilized a standardized scale of stressful life events to compare the responses of HD patients with those of another chronic illness population and with the responses of individuals with no known chronic illness. The major question of interest was whether or not HD patients were similar to other chronic illness patients in terms of stress as measured by life events experienced during the previous year.

### MATERIALS AND METHODS

Four experimental groups were used in the present experiment. The first group was

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TABLE 1. *Mean age and sex distribution across groups (N = 20 in each group).*

	HD inpatients	HD outpatients	Renal disease outpatients	Non-illness controls
Age	$\bar{x} = 53.30$	$\bar{x} = 42.45$	$\bar{x} = 42.60$	$\bar{x} = 42.80$
Sex				
Males	12	12	12	12
Females	8	8	8	8

composed of HD patients residing at the National Hansen's Disease Center (NHDC) in Carville, Louisiana, U.S.A. The second group contained HD patients who lived in the community and who visited the Center at Carville for outpatient services. The subjects in these groups were volunteers selected primarily on the basis of availability. Participation was restricted to patients between the ages of 20 and 60 who possessed at least a minimal proficiency with the English language, and who had carried the diagnosis of HD for at least five years. A third group included renal patients recruited as volunteers from a hemodialysis center in Baton Rouge, Louisiana. All of the renal subjects were receiving regular hemodialysis and had also carried the diagnosis of renal disease for at least five years. The fourth group was composed of control subjects who had no known diagnosis of any chronic illness. These participants were volunteers selected from the hospital staff and guests at the NHDC in Carville, and at a local teaching hospital in Baton Rouge, Louisiana. Although subject selection was made mainly as a matter of convenience, subjects in the third and fourth groups were matched to the HD patients on the basis of age and sex.

Following informed consent, all of the subjects were allowed to complete a Life

Experiences Survey. This questionnaire is a 57-item, two-part, self-report instrument developed by Sarason, Johnson and Siegel (<sup>4</sup>), and is designed to measure life changes experienced during the past year. Section one is composed of 47 specific events as well as three blank spaces used to indicate other experienced events. The items in this section cover events found to be common in most individuals across a wide variety of situations and is completed by all respondents. Examples of events included in this section are marriage, change of residence, and new job. Section two of the Life Experiences Survey contains ten additional events for use with student populations and, therefore, was not used in the present study. Besides noting the occurrence of a particular event, the respondent also indicates the desirability and impact of the event using a seven-point scale which ranges from extremely negative (-3) to extremely positive (+3). A Positive Change Score is obtained by summing the ratings designated as positive by the subject. Similarly, a Negative Change Score is obtained by summing the events rates as negative by the respondent. The total amount of rated change is then represented by the Total Change Score, obtained by summing the absolute values of the positive and negative change scores.

Although an experimenter was always present, most subjects were able to complete the survey independently in approximately ten minutes. Some subjects required assistance in reading items or understanding instructions. Following completion of the survey, the subjects were thanked for their participation and dismissed.

TABLE 2. *Distribution of marital status across groups (N = 20 in each group).*

Marital status	HD in-patients	HD out-patients	Renal disease out-patients	Non-illness controls
Single	9	3	3	1
Married	9	17	14	16
Separated	1	0	1	1
Divorced	1	0	2	1
Widowed	0	0	0	1

## RESULTS

Twenty subjects, 12 males and eight females, were assigned to each of the four experimental groups. Table 1 shows the

TABLE 3. *Distribution of employment status across groups (N = 20 in each group).*

Employment status	HD inpatients	HD outpatients	Renal disease outpatients	Non-illness controls
Unemployed	0	10	18	5
Full time	1	8	2	13
Part time	19	2	0	2

mean ages and sex distribution of the subjects. Chi-square analysis revealed no significant differences for age across groups.

To further test for comparability across groups, chi-square analyses were also conducted to test for group differences in marital status and employment. Table 2 contains a breakdown of marital status among subjects across five categories: single, married, separated, divorced and widowed. Chi-square analysis failed to yield significant differences across groups in terms of marital status, although a definite trend was obvious for higher rates of marriage among outpatient groups as compared to the inpatient sample.

Table 3 illustrates group distributions of employment status with regard to employed (full versus part time) or unemployed. A chi-square analysis revealed significant differences ( $p < 0.01$ ) across groups in terms of employment status. Post-hoc analysis showed that the renal patients had higher rates of unemployment than did other groups. Significantly higher rates of part-time employment were noted in the inpatient HD sample because most of the inpatients at the NHDC participate in an organized program of part-time employment.

Table 4 displays the results of subject responses to the Life Experiences Survey. Means and standard deviations of positive change scores, negative change scores, and total change scores are presented for all groups. Separate analyses of variance were used to compare groups on the three life change scores. Significant differences ( $p < 0.01$ ) were found across groups in terms of both negative change scores and total change scores. Analysis of variance for positive life change scores failed to reveal significant differences across groups. The Student-Newman-Keuls test, used for post-hoc analyses, revealed that the HD outpatient group and the renal outpatient group reported significantly greater negative and total change scores than the non-illness controls. The HD inpatient and outpatient samples did not differ from either renal outpatients or from non-illness controls in terms of positive life change scores.

## DISCUSSION

Results of the present study would suggest that patients with HD are highly similar to renal patients in terms of their experiences of life events. This finding lends support to the notion that chronic illness patients, regardless of their disease type, share many common characteristics. Further research comparing HD patients with various illness populations on other psychosocial variables will serve to further clarify this issue. Such findings may suggest that, indeed, HD patients are similar enough to other chronic illness patients that psychosocial techniques, adapted for other illness groups, might be well suited for use with HD patients.

HD patients, like other chronic illness groups, tend to report more life changes than

TABLE 4. *Means and standard deviations of life change scores across groups.*

Group (N = 20 in each)	Positive change score (mean $\pm$ S.D.)	Negative change score (mean $\pm$ S.D.)	Total change score (mean $\pm$ S.D.)
HD inpatients	6.10 $\pm$ 6.30	7.15 $\pm$ 11.11*	13.25 $\pm$ 14.36*
HD outpatients	7.90 $\pm$ 6.83	12.95 $\pm$ 13.53*	20.85 $\pm$ 15.82*
Renal disease outpatients	6.30 $\pm$ 4.40	11.50 $\pm$ 8.95*	17.80 $\pm$ 10.78*
Non-illness controls	4.95 $\pm$ 5.39	2.65 $\pm$ 3.12	7.60 $\pm$ 6.55

\*  $p < 0.01$ , analysis of variance, compared to non-illness controls.

individuals who have no chronic illness. This is particularly true for negative life events which have been found to be more predictive of illness than positive life events (<sup>1</sup>). Although such results would suggest a possible stress component in HD, future investigations are needed to determine if stress plays a direct role in the onset or exacerbation of symptoms in HD.

### SUMMARY

The present study investigated stress, as measured by a standardized life events scale, in Hansen's disease (HD) patients and as compared to renal patients and non-illness controls. Statistical analyses indicated that experimental groups were well matched on variables of age, sex, and marital status. Regarding analyses of the life events scale, significant differences were found across groups for negative change scores and total change scores. Post-hoc analyses revealed that the outpatient HD group and the renal group were significantly different from the non-illness controls. The results are viewed as support for the hypothesis that HD patients are similar to other chronic illness groups in terms of psychosocial characteristics.

### RESUMEN

En este estudio se investigó el "stress" medido por una escala estandarizada de "eventos de la vida", en pacientes con Hansen y se comparó con el "stress" en pacientes renales y en controles sanos. Los análisis estadísticos indicaron que los grupos experimentales estuvieron apropiadamente igualados en cuanto a edad, sexo, y estado marital. En relación a los resultados, se encontraron diferencias significantes entre los grupos tanto en los puntajes totales como en los puntajes negativos. El análisis de los resultados reveló que los grupos de pacientes hansenianos y renales fueron significativamente diferentes de los controles no enfermos. Los resultados apoyan la hipótesis de que los pacientes con enfermedad de Hansen son similares a

otros grupos de enfermos crónicos en términos de características psicosociales.

### RÉSUMÉ

Cette étude étudie le "stress", tel qu'on peut le mesurer par une échelle standardisée portant sur les événements de la vie. Elle a été réalisée chez des malades atteints de la maladie de Hansen. On a comparé les résultats à ceux obtenus chez des malades atteints d'affection rénale et chez des témoins non malades. L'analyse statistique révèle que les groupes étudiés étaient bien assortis pour l'âge, le sexe, et l'état civil. Pour ce qui est des analyses de l'échelle se rapportant aux événements de la vie, des différences significatives ont été constatées dans les groupes pour les modifications négatives des scores de même que pour les modifications totales des scores. Des analyses menées a posteriori ont révélé que le groupe de malades hanseniens, ainsi que le groupe de malades rénaux, présentaient des différences significatives par rapport aux témoins non malades. On considère que ces résultats soutiennent l'hypothèse qui veut que les malades hanseniens soient semblables aux patients atteints d'autres maladies chroniques quant aux caractéristiques psychosociales.

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