

Denial and Helplessness in Cancer Patients Undergoing Radiation Therapy:

Sex Differences and Implications for Prognosis

HOYLE LEIGH, MD,* JAMES UNGERER, PhD,† AND BERNARD PERCARPIO, MD‡

One hundred consecutive outpatients undergoing radiation therapy were prospectively studied using the *Locus of Control Inventory* designed by Rotter and a questionnaire covering various aspects of diagnosis, implications of disease, and details of therapy. The *Locus of Control Inventory*, which measures a person's belief that life's important events are controlled by personal effort (internality) as opposed to factors outside of one's control (externality), revealed a significant difference between men and women in this study. Although women were similar to the general healthy population, men expressed a greater sense of control as their radiation therapy progressed. Men were also more likely to characterize their illness as not very serious and to deny knowledge of their correct diagnoses or details of their treatment. With survival determined at two years following the study, it was found that living and deceased women had initially rated the seriousness of their illnesses appropriately, while deceased men had rated their illnesses as significantly less serious than women or surviving men. It is concluded that sexual differences in coping mechanisms may be accentuated by malignancy and men may actively deny their diagnosis and its implications. This amount of denial and sense of personal control in the face of a potentially fatal illness may indicate a need for more supportive clinical intervention for the radiation therapy patient.

Cancer 45:3086-3089, 1980.

THE PATIENT'S PSYCHOLOGICAL STATE often plays an important role in the detection and management of serious illness. Two such states seem to be denial and a feeling of helplessness. Denial has been shown to be adaptive in certain situations, *e.g.*, the coronary care unit.² However, denial may also be maladaptive in other situations, *e.g.*, the preoperative period.³ A feeling of helplessness has been implicated in the precipitation of various illnesses.⁸ In Yale-New Haven Hospital Clinic, we have noticed that a feeling of helplessness seems to characterize some cancer patients while other patients never exhibit this feeling. Helplessness, or the notion that important life events are beyond control, may lead to depression and anxiety. These emotions, in turn, may affect many aspects of treatment as well as the personal lives of the patients.

In view of their apparent significance, we decided

to study the extent of denial and helplessness in a group of cancer patients undergoing radiation therapy. We also attempted to determine the presence and degree of any clinical consequences of helplessness and denial such as an acknowledgment of having cancer as well as an awareness of the seriousness of such a condition.

Materials and Methods

Our investigation had two distinct phases. In the first phase, we studied various denial and helplessness responses of patients undergoing radiation therapy. During the second phase, we compared the original responses of patients who survived with those of patients who died within two years of completing the questionnaires.

Phase I

One hundred one outpatients who received radiation therapy at Yale-New Haven Hospital during 1976 were studied at random times during the course of irradiation. During one of their daily visits, subjects received two questionnaires from the receptionist as they reported for radiation therapy. The questionnaires

From the Departments of *†Psychiatry and ‡Therapeutic Radiology, Yale University, New Haven, Connecticut.

* Associate Professor of Psychiatry; Director, Psychiatric Consultation Liaison Service.

‡ Assistant Professor of Therapeutic Radiology.

Address for reprints: Hoyle Leigh, MD, 1070 CB, Yale University School of Medicine, New Haven, CT 06510.

Accepted for publication June 26, 1979.

consisted of a *Health Awareness Questionnaire* developed by us in order to explore patients' degree of knowledge concerning their disease and its treatment. The questions included: 1) the name of the responsible physician; 2) the condition which necessitated treatment; 3) the seriousness of illness; and 4) the number of treatments remaining. The self-reported seriousness of illness was determined on the basis of responses ranging from 1 (not serious at all) to 4 (very serious). The second questionnaire completed by our subjects was the *Locus of Control Inventory* designed by Rotter.⁷ This inventory measures the degree to which a person believes that important life events are controlled by personal effort (internality) versus the degree to which he believes important life events are controlled by chance or powerful others (externality). The degree of externality may indicate the amount of subjective helplessness on the part of the patients.⁶ Scores on the *Locus of Control Inventory* range from 0 through 23. Higher scores represent a more external orientation. All patients who participated in this study gave informed consent, and the refusal rate was negligible.

Chart Review

A radiation therapist (B.P.) reviewed each patient's chart at the conclusion of the study (he was "blind" to each patient's responses to the questionnaire). Demographic data, diagnosis, expected five-year survival rate, and the name of the responsible physician for each patient were tabulated.

Results

The demographic data of our subjects are presented in Table 1. Although men were significantly older than women as a whole, there was no sex difference in terms of the severity of illness or prognosis between the two groups, as judged by the oncologists (five-year survival rate). Since not all patients responded to all questions in the questionnaire, the number differs across items.

A summary of the locus of control data according to sex is presented in Table 2. Men expressed a greater sense of personal control or became more internal as therapy progressed ($r = 0.44, P < 0.01$) while the locus of control of women remained stable ($r = 0.12, P > .10$). A closer examination of sex differences in locus of control revealed that during the initial portion of the treatment course, *i.e.*, ten treatments or fewer, the mean locus of control of men was not different from that of women. During the final portion of the radiation therapy course (more than ten), however, men were significantly more internal than women at

TABLE 1. Chart Review of Cancer Patients

	Men	Women
Mean age (years)	61.8	50.7
Number of patients		
White	40	57
Black	0	3
Treatment for recurrent malignancy or metastasis	12	18
Expected five-year survival rate		
75-100%	5	9
50-75	9	12
25-50	9	15
5-25	6	13
<5	11	11
Diagnoses (types of cancer)		
Lung	8	0
Laryngeal	6	1
Prostate	6	0
Skin	1	1
Mycosis fungoides	1	0
Bladder	3	1
Brain	1	3
Oral cavity	3	1
Breast	1	25
Parotid	1	1
Squamous cell	1	1
Testicular	1	0
Plasmocytoma	1	0
Nasopharyngeal	1	1
Rectal	2	0
Hodgkin's disease	1	5
Gastric	1	1
Malignant lymphoma	1	1
Ovarian	0	7
Uterine	0	3
Esophageal	0	2
Renal cell	0	1
Ependymoma	0	1
Fibrosarcoma	0	1
Pancreas	0	1

the same phase of treatment ($t_{42} = 3.24, P < 0.01$) and women during the initial half of treatment ($t_{60} = 3.08, P < 0.01$). Furthermore, men in the final stages of the treatment were more internal than men during the initial stage of treatment ($t_{37} = 2.69, P < 0.02$). Age difference

TABLE 2. Number of Treatments and Locus of Control

	Group I (1-10 treatments)	Group II (11 or more treatments)
Men	9.53 (n = 15)	6.12 (n = 24)
Women	9.31 (n = 38)	9.90 (n = 20)

Higher locus of control scores signify externality.

TABLE 3. Number of Treatments and Patient's Age

	Group I (1-10 treatments)	Group II (11 or more treatments)
Men	62.6 years	59.0 years
Women	51.4 years	50.2 years

TABLE 4. Health Awareness Questionnaire

Question	Men (%)	Women (%)
Did not know diagnosis	48	16
Did not know number of treatments remaining	41	24
Illness not very serious	81	63

TABLE 5. Self-Assessed Seriousness* of Illness

	Dead	Alive
Women	3.71*	2.90
Men	2.00	3.27

* Seriousness graded from 1, not at all serious, to 4, very serious.

TABLE 6. Mean Locus of Control

	Dead	Alive
Women	8.9	9.9
Men	9.1	7.0

between men and women was significant, but differences across treatment conditions were not.

These results were not due to differences in age, race, or prognosis, since these variables did not differ significantly across treatment conditions (Table 3).

The responses to the *Health Awareness Questionnaire* indicated that approximately 8% of the patients either did not know the name of the responsible attending physician or gave the name of the wrong doctor. There was no significant sex difference in knowledge of the name of the responsible physician.

Compared to women, significantly more men denied any knowledge of their diagnoses ($\chi^2 = 12.17$, $P < 0.01$.) (Table 4). Throughout the course of therapy, men were more likely to deny any knowledge of the number of treatments remaining ($\chi^2 = 3.36$, $0.10 < P < 0.05$.) Also, a greater proportion of men claimed that their disease was not very serious ($\chi^2 = 2.74$, $0.10 < P < 0.05$).

Study II: Two-Year Follow Up Survivors vs. Nonsurvivors

Methods and Procedures

In 1978, we determined which patients were living two years after completion of the initial questionnaire. We found that 9 women and 11 men failed to survive the two years. We compared the initial self-reported seriousness of disease and the locus of control between the nonsurvivors and survivors.

Results

The original questionnaire gave the patients choices ranging from 1 (not at all serious) to 4 (very serious). A fifth category, "I don't know," was also included. Some of the questionnaires administered at the beginning of Phase I did not contain the question concerning seriousness. Furthermore, some patients left the item blank while others endorsed the "I don't know" category. These individuals were not included in the Phase II analyses. A total of 56 patients, 38 women and 18 men, completed items one through four of this question. The self-assessed seriousness means for the deceased and nondeceased male patient groups are presented in Table 5. A two-way analysis of variance indicated a significant main effect for sex ($F_{1,52} = 5.19$, $P < 0.05$). Detailed analyses suggested that the deceased men had rated their conditions as significantly less serious than had either deceased women ($t = 4.77$, $P < 0.01$) or nondeceased women ($t = 2.08$, $P < 0.05$). Deceased men had also rated their conditions as significantly less serious than had nondeceased men ($t = 3.68$, $P < 0.01$). The groups did not differ with respect to age. At the time the questionnaire was completed, both deceased groups had had significantly poorer prognoses than had the nondeceased groups according to the chart review data. The prognoses for the deceased men and women were, in fact, identical. There was no significant difference in the locus of control scores between the survivor and nonsurvivor groups (Table 6).

Discussion

Our results concerning locus of control suggest that men express more feelings of control over their lives as radiation therapy progresses. Women, however, do not demonstrate a change in sense of control during the entire course of treatment. An important addendum to these findings is that the average sense of control stated by both women and men at the *initial stage of treatment* and by women during the *final stages of treatment* corresponds with that ($\bar{X} = 10-11$) of large samples of healthy young adult women and men.⁷ In short, women at all stages of outpatient radiation cancer therapy and men at the initial stage manifest no greater sense of helplessness than do comparison groups. Although cancer is a life-threatening illness, the current evidence implies that the patients may not express significant helplessness, at least during early stages of treatment.

Because the difficulties of controlling cancer are well known, these results are rather surprising. One explanation may be that some patients actively deny

the implications of their disease. This seems especially true for men. As radiation treatment progressed, men felt more in control, in spite of the fact that the degree of discomfort may have increased in radiation treatment. Throughout treatment, men were more prone to *deny knowledge of basic health information* that systematically was made available to them by their physicians. They were more prone to claim ignorance of the seriousness of their condition, the number of radiation treatments remaining, and, most surprisingly, their diagnoses.

The policy of the Radiation Therapy Department is to inform each patient of his diagnosis, his prognosis, and his probable course of treatment. Admittedly, a systematic sexual bias may be operating that serves to hamper communication between physicians and male patients. Another explanation is that the emotional response of older patients to radiation treatment may differ from that of younger patients, regardless of sex. A more plausible explanation, however, is that men may be more likely to employ defensive denial in coping with life-threatening situations. The more pronounced tendency of women to admit anxiety may not represent greater anxiety but actually may represent a more realistic verbal assessment than that of men.

This sex difference seems to be highlighted in our follow-up study. Those women who failed to survive for two years since the completion of the questionnaire had assessed their condition as being moderate to very serious while the male patients who failed to survive had rated their condition only as somewhat serious. In fact, the female nonsurvivors had rated themselves as more seriously ill than any other group rated itself, while the male nonsurvivors rated themselves as *less* seriously ill than any other group. These findings are in agreement with those of several studies which indicate that women are more likely to accept and express their anxieties about physical illness and death, while men are more likely to deny them.^{1,4,5,9,10}

Our data suggest that in the presence of a serious and potentially terminal disease, the sexual differences in the coping mechanisms may be accentuated.

Whether terminally ill men experience but refuse to express anxiety or whether they effectively deny (and do not experience) anxiety cannot be determined from our data. If the latter is the case, the denial and resultant anxiety reduction do not seem to be adaptive enough to reduce the mortality rate in two years' time. If the former is the case, men might benefit a great deal more from supportive clinical intervention than their self-reports may suggest.

The clinical implications of our findings are that men may suffer from more anxiety than they will admit to their clinicians, their families, or to themselves. This may result in a considerably less adaptive approach to emotions as well as to health. For example, with the advent of serious illness, men may be less constructive than women in interpersonal relationships. In addition, men may delay discussing symptomatology that might be critical to successful treatment. In view of these implications, a prudent clinical course of action might incorporate a more sensitive inquiry into the health awareness and emotions of men who are undergoing treatment for a potentially terminal illness.

REFERENCES

1. Chiapetta, W., Floyd, H., and McSeveney, E.: Sex differences in death attitudes. *Psychol. Rep.* 27:136, 1970.
2. Hackett, T. P., Cassem, N. H., and Wishnie, H. A.: The coronary care unit. An appraisal of its psychologic hazards. *New Engl. J. Med.* 279:1365-1370, 1968.
3. Janis, I.: *Psychological Stress*. New York, John Wiley & Sons, 1958.
4. Lester, D.: Re-examination of Middletown's data: Sex differences in death attitudes. *Psychol. Rep.* 27:136, 1970.
5. Lester, D.: Sex differences in attitudes toward death. *Psych. Rep.* 28:754, 1971.
6. Patton, J., and Frietay, C.: Correlational study of death anxiety, general anxiety, and locus of control. *Psychol. Rep.* 40: 51-54, 1977.
7. Rotter, J.: Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *J. Consult. Clin. Psychol.* 43(1):56-57, 1975.
8. Schmale, A. H.: Giving up as a final common pathway to changes in health. *Advances Psychosomat. Med.* 8:20-40, 1972.
9. Templer, D.: The construction and validation of death anxiety scale. *J. Gen. Psychol.* 82:65-177, 1970.
10. Templer, D., Riff, C., and Franks, C.: Death anxiety: Age, sex, and parental resemblance in diverse populations. *Develop. Psychol.* 4:108, 1971.