PSYCHOLOGICAL CORRELATES IN THE DEVELOPMENT OF CANCER

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Do the personality traits of our youth and our family background influence our health in later life? Do psychological and behavioral patterns contribute to the occurrence of cancer? For many, the idea that an apparently physical disease is linked to personality or psychological characteristics seems absurd. Yet, a large body of research literature has accumulated over the past several decades indicating that such a link exists. To make my questions more concrete, let us consider the profiles of two men (from my colleague's grant application in 1974)

"Two well-known political figures are dead. Mayor Richard J. Daley, died of heart attack at 74. Senator Philip A. Hart, "Conscience of the Senate", died of cancer at 64. News accounts report their similarities and differences. Both were Irish-Americans, family men, loyal Catholics, ardent patriots, life-long Democrats. But while Daley was "abrasive", "clawed his way up the political ladder", "had clout", and was a "powerbroker", Hart was "the gentlest of men", "soft-spoken", "self-effacing" "a gently persuasive lawmaker", "had a gentle good humor", and "had a reluctance to brag about his accomplishments". There can be little

doubt that, for both men, these were life-long characteristics. Extreme cases, to be sure, but they illustrate our thesis that personality patterns are present throughout adult life and could be detected objectively."

With our current knowledge, we have no trouble recognizing the "Type A" coronary-prone pattern in Mayor Daley. It has been described in many scientific and pop-psychology publications, and has been accepted as truth . Would Senator Hart's pattern be characteristic of a cancer-prone personality?

A large body of published studies have yielded a resounding "yes" to the question. In fact, two investigators, Kneier and Temoshek (1984), proposed a "Type C" behavior pattern to characterize a cancer-prone person. This pattern, according to them, showed a coping style marked by a tendency to denial, suppression and repression of emotions, to act socially conforming and "nice", and to be non-assertive. Senator Hart's profile fits very well with such a behavior pattern.

In addition to the repression-denial coping style of the Type C, other psychological traits have been linked to the occurrence of cancer. LeShan's classic work in the 1950s proposed an association between a person's life history and neoplastic disease. He reviewed life histories of many cancer patients and found

disproportionately large numbers of early traumatic experiences, in particular experiences of loss, among them. This loss, he suggested, created a predisposition to chronic depression with its feelings of helplessness and hopelessness. His work stimulated several studies in the 70s and 80s, but the results have shown only limited support for the expected link between early traumas, depression and cancer. Many among these studies, however, suggested that the ability to form warm, satisfying ties with others, which was developed early in childhood, was inadequately present among cancer patients; the ensuing feelings of loneliness and alienation were considered as important factors in the emergence of cancer.

The studies I am about to report as part of my own work stem from these latter findings. We explored the broad hypothesis that the QUALITY of human relationships is a significant component in health and illness, including the development of cancer.

When I was living in Baltimore, I worked in a research project at Johns Hopkins, called The Precursors Study. My initial task was to identify psychological correlates in the development of cancer. In the 80s and 90s, the NIH (National Institutes of Health) and the National Cancer Institute actively promoted research on psychological factors and cancer; thus my involvement was

adequately funded. Let me first tell you about the Precursors Study because, as a prospective longitudinal investigation, it is unique in its approach and longevity.

The Precursors Study is the brain child of Dr. Caroline Bedell Thomas, an internist and a maverick, affectionately known as CBT. She initiated the study in 1946 and was actively involved in the investigation until her death in 1996(?). She began by collecting biological, physiological, social and psychological information from Johns Hopkins medical students and expanded the collection to include all students graduating in 1948 through 1964 – 1,337 subjects in all (most of this "cohort" were white males). After their graduation, CBT, every year, sent them questionnaires in all aspects of health, which allowed for an extensive recording on each subject. The cohort members were, and are, faithful participants, also leading long lives although several have reported having a major disorder (hypertension, coronary heart disorder, cancer, mental disorder); some have died.

When I joined the Study in 1990, an exciting new finding had emerged. One of the psychological measures given to the medical students explored their attitudes in their family when growing up (father-son; mother-son; father-mother) (65 items in all). A subscale of this measure tapped the subjects' degree of closeness to their parents. When the scores from those male students who

subsequently developed cancer (N = 48) were compared with subjects who now, some 40 years later, had remained healthy, the subjects in the cancer group reported fewer positive attitudes and more negative attitudes toward their parents; this was particularly true for father-son relationship. This finding suggested the hypothesis that the quality of human relationships may be an important component in the development of cancer. It led me to seek other available measures of interpersonal relationships. (In what follows I shall be somewhat technical; my purpose is to convey aspects of the work that is involved in psychological studies.)

One of the psychological measures my maverick boss had administered to the medical students was the Rorschach inkblot test. The test comprises ten cards, each with an amorphous image, which permits a virtually unlimited range of responses. There are no right or wrong responses. (Show a couple of cards and ask for replies.)

The responses to the cards are thought to reflect our unconscious feelings and views, and thus provide information about our personality and inner self.

One thousand and thirty two male students took the Rorschach test, giving some 40,000 responses, which had been printed out by computer. A confidential identification number

labeled each protocol. Thus all work was done without any knowledge of the subjects, including their health status.

My assumption was that a person projects his capacity for emotional relatedness with others to those Rorschach responses that involve human or animal figures in interaction. I called this capacity "relationship potential" and, with my colleagues, developed a scale, Rorschach Interaction Scale (RIS) to measure individual relationship potential. My two assistants and I culled all Rorschach responses involving two or more figures to develop the RIS; this 11-point scale (which you see in the handout) measures varying degrees of harmonious, emotionally "positive" interactions, and antagonistic, emotionally "negative" interactions. As the three of us independently scored the Rorschach protocols, we were able to determine the degree of agreement between our scorings (it was quite satisfactory).

The next step was to assign each subject to one of six interaction patterns based on his scores on the RIS. The patterns were defined a priori following guidelines from clinical dynamic psychology. These guidelines state that the mark of mature, "good" adjustment is not the ABSENCE of negative feelings, but rather, the presence of mutually opposite feelings IN MODERATION in significant relationships (love-hate; affection-aggression) . In contrast, the occurrence of poorly balanced, intensely negative

and/or intensely positive feelings signifies poor adjustment. (Discuss the handout here.)

I had the help of excellent biostatisticians, who examined the data from the patterns through high-power, state-of-the-art statistical analyses. They used multivariate analyses, which allowed for control of the effects of numerous risk factors. They administered survivorship analyses to explore whether the subjects who eventually developed cancer had significantly different RIS scores from the remaining subjects when the time of diagnosis and length of follow-up were taken into account and adjustments made for baseline age, smoking, and serum cholesterol level (this information was collected in medical school.) (A parallel analysis was performed for the other disorder groups as well, such as coronary heart disease, ulcer, etc.) They established the cumulative proportion of disease occurrence in each separate RIS pattern over the follow-up time.

We compared the group of subjects, now diagnosed with cancer, with other disorder groups (specifically hypertension, coronary heart disease, skin cancer, benign tumor, duodenal ulcer, mental disorder) and the rest of the cohort, presumed to be healthy. I shall summarize the main findings. First, the predictive potential of the RIS pattern scores appeared specific for cancer as the scores failed to show any association with the other illnesses. Next, the

six patterns differed significantly from each other, when we looked at the cumulative proportions of cancer over the follow-up time. At the end of 30 years of follow-up, the Flexible group had the lowest proportion of cancer (3%), and the Avoidant and Ambivalent groups had the highest proportions (12 and 13% , respectively). Third, we established the relative risks for developing cancer in each RIS pattern group. Using the Flexible group as a base line "reference group", the relative risks for developing cancer were highest among the two least well-adjusted groups, 3.09 for the Ambivalent, and 4.10 for the Avoidant group. Thus, the worse a person was rated in interpersonal relations according to the RIS pattern scores, the greater was his risk of developing cancer.

An important footnote here. The objection is often raised that the disease may influence psychological and other factors that are studied, even when the disease is not yet clinically manifest. In our study, the subjects were in their early twenties when they took the Rorschach test, and in their mid-forties when cancer was diagnosed - a time interval of 15-30 years. It was reasonably certain, we felt, that the medical school measurements reflected a condition that existed way before the onset of the illness.

How to understand the findings; how to consider the role of "relationship potential" in association to the development of

cancer? Let us keep in mind that the RIS patterns (as well as the earlier mentioned Closeness to Parents scale) describe perceived, "subjective" relationships. They do not address overt, behaviorally expressed, "objective" relationships. Thus the measures reflect internal representations of ourselves in relation to others. Other investigators have established that these "internal self-other representations" exert a powerful influence on adjustment and behavior. In addition, recent psychosomatic research has shown that they play an important role in biological regulation (cf. autonomic physiology; neurochemistry of the developing brain). Translated to our findings, representations where positive and negative feelings are moderated and emotionally balanced (such as in the Flexible pattern) would serve as effective regulators of events that may disturb biologic systems. A reverse outcome would be connected with representations that indicate an impaired integration of mutually opposite emotions. The impairment may be revealed in images of others and self as either exaggeratedly "good" or "horrible" (cf. Ambivalent pattern), or it is dealt with by a lack of investment in self-other relationships (cf. Avoidant pattern). Such impaired representations would fail to act as effective regulators and, instead, would contribute to the breakdown of our psychobiological equilibrium as shown in

disease states such as cancer. If so, the processes of regulation are important in unraveling the body-mind-environment relationship.

Lastly, I wish to emphasize that my purpose is NOT to suggest causal connections between psychological factors and cancer. Nor do I address the complex psychological adjustment that everybody diagnosed with cancer goes through. My purpose is to challenge the continuing belief that mind and body are separate entities. Moreover, there is a strong trend to identify a single cause for each disorder and, once that cause has been found, the chronic disease could be abolished. There is no single cause. Instead, each disease has to be unraveled in its own body-mind-environment relationship.

My maverick boss offered an alternative view to the single-cause approach, the "kaleidoscopic model". She said, "In my kaleidoscopic model, rooted in psychobiology, many genetic and environmental factors enter into the health equation. While some factors are more important than others, the overall pattern determines the outcome. As life goes on, the kaleidoscope turns a little as each new positive or negative factor is added. Thus, the pattern is constantly changing and is susceptible to future change. The persistence of good health, or the development of different types of disease, depends on the particular configuration of factors in a given individual at a given time. There are major protective

factors, as yet little understood, and one factor alone cannot be the primary cause of cancer. In the end, the likelihood that traits of character may join with genetic and environmental factors to play a causal role in cancer is a challenging possibility, the truth of which can only be determined by further study."

What do you think?