

Behavior and Cancer: Life-Style and Psychosocial Factors in the Initiation and Progression of Cancer, Sandra M. Levy. San Francisco, Jossey-Bass Publishers, 1985, 257 pages.

This book appears to promise a good deal. It was intended as "a serious and critical examination of the role that behavior plays as contributor to the cancer process," (p. 25). Unquestionably, the topic is of great significance to health workers, to those involved in educational programs relating to risk, and to investigators with an interest in health behavior. In form and substance, the book is an elaboration on a two-by-two table, in which one basis of classification is the direct *vs* indirect effects of behavior on cancer, and the second is initiation *vs* progression of disease. Beyond this relatively simple set of categories, there lurks a good deal of complexity. Behaviors with both positive and negative effects are discussed. For example, occupational exposure to carcinogenic agents and measures that are protective against such exposures are included. Although generally the meaning of a type of behavior is clear within this framework, in some cases it is not obvious (e.g., the role of some types of screening seems elusive).

Six chapters are devoted to the four cells of the classification scheme, sandwiched between an introduction and a conclusion. The behaviors referred to are quite a mixed lot. Using a very broad, and, to me, nonobvious definition, the author refers to behavior as "a biological response modifier," (p. 25). Based on this concept, behaviors are limited to presumed causal or mediating processes; for the most part, behavioral outcomes, or responses to cancer are excluded. While Levy does touch on personal reactions to cancer ("the devastating blow that the diagnosis of cancer deals," p. 200), it is principally in the context of potential effects on tumor-host relationships.

For several years, Dr. Levy was chief of the Behavioral Medicine Branch of the National Cancer Institute; she is currently a faculty member of the University of Pittsburgh School of Medicine. In the development of health psychology as a field, she has played a leading role. Given her research and experience, she is well-qualified to write about behavior and cancer. From a recent report of factors predicting the progression of breast cancer,¹ it is evident that Dr. Levy's interests go well beyond psychology proper, into the biobehavioral and immunological areas.

Among the direct contributors to cancer is exposure to sunlight. Levy notes that cancers of the skin are nontrivial, and that there is some connection between exposure and the occurrence of melanoma—a deadly form of cancer that is on the increase worldwide. Discussion of the effects of ionizing radiation and ultraviolet light is lucid and informative. Similarly, the presentations on tobacco and alcohol use, major direct contributors to an array of cancers, are generally well-done and useful; a brief treatment of issues of prevention ends the section. On the other hand, workplace cancer is discussed in a way that seemed quite superficial. Although a sobering list of established occupational risks for cancer is presented, the text deals mostly with compliance by workers to protective measures, and interaction of cigarette smoking and carcino-

genic substances in the work-place environment. Coverage of the problem of work and cancer did not seem adequate. In fairness, the role of management in providing a safe work place is noted, but the major thrust is on "behavioral cooperation on the part of the worker." By contrast, a better balance is achieved in discussing the role of medical care, where the importance of professional action and interaction is emphasized. An important point on the need for a cumulative record of exposure is reiterated in several places.

Coverage of indirect contributors to cancer features sexual behavior and diet. In this portion of the book, Levy remarks on the irony that cancer risk is associated with "two aspects of the human condition that are fundamental to the definition of one-self," (p. 51). It may be true, that as the National Cancer Institute proclaims, not everything causes cancer, but the pessimist's maxim, "expect the worst," may not be that far off the mark. At any rate, the book presents an excellent discussion of gynecological cancer, and a somewhat less helpful look at dietary factors. In the latter, the material seems bland and lacking in a spark of engagement with the issues involved. Included in the section on sexual behavior is a brief excursion into AIDS. With references into 1983, the publication of this book apparently missed really significant work, and the astonishing breakthroughs in knowledge that have since occurred. Perhaps as a result, the discussion sounds tentative and outdated.

In taking up the progression of cancer, Levy again deals with a wide array of topics: screening, detection, compliance with regimens, immune and hormonal responses, and, behavioral and emotional factors. Depth is not very much in evidence and many seemingly important points are given short shrift. For example, people will make apparently strange attributions in the presence of what seem to be obvious symptoms; the literature on delay in seeking care, however, is not enhanced here so that we do not see an advance in understanding. On the other hand, a discussion of breast self-examination is both clear and effective, leading to the point that "major emphasis should be placed on recruiting high-risk women into health screening programs and enhancing their compliance with follow-up referrals and recommendations." (p. 91).

Discussion of the Pap Test is succinct and informative. Other cancer-screening activities are given briefer treatment; I ended up wondering whether colorectal screening (for example) is considered efficacious, but this may reflect the nondefinitive nature of the data available. Some confusion over effectiveness, compliance, and the value of early detection is evident in these parts of the book.

In writing about patient compliance, the author seems to lose the organized focus that was present in discussing, for example, breast self-examination. There is relatively little known about compliance among cancer patients, but Levy's discussion slights all sides of the problem, including general compliance literature. Interesting ideas are touched on (for example, problems of enrollment in controlled trials and issues of informed consent), but an overall structure is absent. More attention is needed to such issues as the effectiveness of the therapy, and the perceptions by patients concerning benefits and costs of compliance. It is quite possible that what is known about medication compliance in other situations, such as infections, is irrelevant for much cancer treatment.

Under the rubric of cancer progression, two chapters are included that appear to be out of place in this book; one deals with immune reactions and the other with hormonal regulation of tumor growth. Neither was written by Levy. While these chapters

contain words about psychosocial influences, they are by and large discussions of physiological and biochemical responses; as such, they go off in directions that are doubtless important but lack a fit with the rest of the book. In the final chapter on cancer progression, Levy elaborates somewhat on hormonal and immunological aspects of tumor regulation. It is principally focused on breast cancer and the writing shows clearly the author's involvement in the topic. In the last part of the chapter, there is a shift to the role of passivity (vs active coping styles) in cancer progression. This material is well-presented and, though largely speculative, engaging.

We have here, as the reader might divine, a work of mixed quality, not well-knit overall. Some comparisons with other published material came to mind. Ten years ago, *Cancer: The Behavioral Dimensions*² appeared, reporting a big-league conference sponsored by the National Cancer Institute. Significant parts of the edited volume dealt with coping with cancer as an experience, and with public communication about the disease. It was also heavy on presentations by generic experts, not particularly relevant to cancer per se; in fact, Jack Haskins gave a (humorous) "review of mass communication in relation to (blank)." On such issues as delay, screening, environmental risks, and the effect of the diagnosis on the patient, I don't see much by way of significant advance since that conference. A 1984 special issue of *Health Education Quarterly* dealt with "Cancer Patient Education."³ As a selection of articles, the focus was on the patient experiencing cancer, and on the special requirements for education in relation to patient needs. It is interesting that the book by Levy comes to the viewpoint of the patient in relation to the disease at the end of concluding chapter. Yet, for the most part, her volume occupies a place that differs from the other two works, in that *risk* itself is the focus. To me, the distinct contribution is in portions of the discussion concerning specific risks for developing cancer, and concerning the progression of cancer. This contribution is a real one despite the many flaws present in the book.

References

1. Levy S, Herberman R, Maluish A, et al.: Prognostic risk assessment in primary breast cancer by behavioral and immunological parameters. *Health Psychology*, 4:99-113, 1985.
2. Cullen J, Fox B, Isom R (eds.): *Cancer: The Behavioral Dimensions*, New York, Raven Press, 1976.
3. Blumberg B (Ed.): Cancer patient education, *Health Educ. Q.*, 10: Special Supplement, John Wiley & Sons, Inc., Publishers, New York, 1984.

John P. Kirscht, PhD
School of Public Health
University of Michigan