ILLNESS, THE MIND, AND THE BODY:
CANCER AND IMMUNOLOGY: AN INTRODUCTION

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ABSTRACT. From the sixties on it has become clear how the human physical condition
could be influenced by human behavior. Although hypothesis were lacking to understand
these connections, nursing research especially proved how systematically introduced patient
behavior during illness and hospitalization could induce better recovery results and better
prognosis for the patient. Information and attitude proved to be crucial elements in these
processes of improved patient expectations. It took less than two decades to get to the insights
we have in 1994. Recent research shows the interlocking mechanisms of nervous and
endocrine systems with the immune system as significantly being influenced by behavior
and especially psychic and or psychosocial stress.

This special issue of Theoretical Medicine briefly describes the historical development
with contributions on the most recent state of the scientific art. These developments are
emphasized by discussion on the clinical reality of the (breast) cancer patient and recent
findings on the complexity of the prevalence of cancer in epidemiology. An attempt is made
to consider practical consequences of the actual knowledge if applied to patient care.

Key words: cancer, clinical practice, epidemiology, human behavior, immunology, psycho-
trauma, sexology, stress

1. INTRODUCTION

Nursing research, published in the seventies, suggested controlled influence on patient recovery under behavioral conditions. Several articles reported successful interventions applying progressive relaxation, circum-
script behavioral training or even just improved patient information. They
presented undeniable effects on recovery time, side effects and complica-
tions of surgery and even healing of wounds. Some studies presented
significant correlations between a patient’s attitude, levels of stress, and
the concentration of metabolizers like K and N in blood composition.1,2,3

Although the level of this research was often more than acceptable and
sometimes even met high standards, the results did not have a real impact
on professional behavior on the clinical floor. The reasons are under-
standable. If considering the consequences of the results, behavioral
totential of the body. Changes of health care professionals became conditional on more preven-

tion time – investment in patients. The main resistance was due to the challenge for a transformation of patterns of thinking and reasoning, away from the traditional reductionistic and monocausal approach. Hence there was minimal criticism and discussion about the issues but merely silence, which is, generally speaking, more "effective" than argument in processes of neglect.

One additional and important aspect supporting the negligence was the absence of any understandable insight about suggested connections as well as the absence of a reasonable hypothesis to understand those correlations. Nursing research discovered causal relationships but still lacked a theoretical basis to clarify behavioral-body relations.

During the eighties and early nineties remarkable changes occurred. The improvements in research design, support from animal research, broadening of interest from just nursing research to the social sciences, biology and epidemiology, cumulated in increasing theoretical interest in the subject. Isolated calls from the sixties for a more "whole-istic" approach in medical practice could now more easily be translated into operational challenges for new quantitative and qualitative investigations into body-mind-environment relations. This was all the more a challenge because hypotheses about the "missing" bridges were developed and were ready for translation into fruitful investigations. Neuroanatomy was ready to hypothesize about a mutual influence of attitude and behavior and the intermediating role of neurotransmitters and related biochemical processes. Immunology became another resource for investigations, providing its own new hypotheses. With the introduction of psycho-immunology a first insight in the relation between behavior and somatology was presented.

These developments, mainly still in progress, attracted attention by a broader audience in medicine due to some unexpected but impressive studies. A study by Spiegel et al., presented in The Lancet in 1989, about the effects of psychotherapy on the survival of breast cancer patients, was shocking, but could withstand criticism. Another example was the epidemiological work by Sørensen's group in Denmark, published in the New England Journal of Medicine in 1988, demonstrating the interactions of genetic and environmental factors in the prevalence of cancer, and the crucial intermediating role of the immune system in patterns of disease and dying.

Many studies in this area have been published over the last ten years. Basic research focuses on genetics, immunology, endocrinology or neurology and their interdependency; other studies concern the possibilities of application in health care practice. Cancer was the central focus in a majority of the studies. More recently, however, a broader field of (chronic)