**Sample Essay on Cancer**

Cancer is still seen by many as an incurable disease that slowly takes over healthy human tissue, and ultimately causes death. Through advances in medical science, different physical procedures have been developed to treat cancer – for example, chemotherapy, radiotherapy and surgery. In recent years however, there has been a growing perception by cancer specialists and patients that the onset and treatment of cancer may be affected by psychological factors. A new field of research called psycho-oncology has emerged to investigate how the mind can slow down, or even reverse, the progress of cancer. The results from such studies however, have not always been conclusive, and in the case of retrospective studies, have often proved contradictory. While it is important that medical science properly investigate the merit of mind-cancer theories, the benefits of alternative therapies and viewpoints should not be overlooked in the debate over cancer research. The essay briefly surveys the origins of mind-cancer research and the emergence of the field of psycho-oncology, before addressing contemporary research in the area, in particular, the problem of validating results. It concludes by examining the merits of alternative therapies with regard to patient psychology.

Before examining the origins of mind-cancer research, the physiology of cancer will be briefly discussed. "Cancer" is a general term used to describe a physiological disorder in which cells in the body begin to reproduce as abnormal cells, forming a mass called a tumour. There are different types of cancers and tumours, and the body utilises the immune system to destroy the cancerous cells. If the tumour is malignant, the immune system stops the cancer cells from moving to other areas of the body. The immune system halts the spread of the cancer cells by the use of cytotoxic T-cells, also known as "natural killer" (NK) cells. These cells attack the cancerous cells and destroy them. This is why much cancer research over the years has concentrated on the immune system because in effect, this system provides the body's own natural cancer treatment.

In several studies completed over the last two decades, researchers have found that psychological factors such as stress and bereavement can suppress NK cell activity in the body, and the activity of all T-cells in general (Bartrop, 1977; Sali, 1992, cited by Kune, 1992). This phenomenon (immunosuppression) has come to be viewed as a contributing factor in many physiological diseases including allergies, infections, digestive disorders, asthma, heart disease, and cancer (Edelman & Kidman, 1997). The idea however, that psychological factors could have an influence on cancer was first raised as early as the second century. The Greek physician, Galen, noted that depressed women were more likely to develop cancer than happy women (cited by Sdorow, 1995). Other eminent physicians and surgeons also noted that the personalities of people who had developed cancer were markedly different to people who had not developed cancer (cited by Kune, 1992); i.e, they concluded that cancer was more likely to develop in people who possessed a 'melancholy' disposition (cited by Horne, 1996).

This raised the question of why such psychological factors might influence the behaviour of cancer. Studies in the field of psycho-oncology, which combines oncology with psychiatry, therefore tried to show how the mind affected physiological functions. Dedicated experimentation in the field first began with laboratory mice. Sklar and Anisman (1979) implanted cancerous cells into mice, and then subjected them to a series of escapable and inescapable electric shocks. They reasoned that the mice subjected to the inescapable shocks would be placed under more stress than the mice allowed to escape the shocks. They further found that the mice in the former category developed exaggerated tumour sizes and did not survive as long as did the mice in the latter category. Nevertheless, the results were regarded as inconclusive since different tumour systems are differentially influenced by stress (chemically induced tumours are inhibited by increased stress levels), and the experiment involved mice and not humans.

Research was then directed to cancer patients. Many studies concentrated on women suffering from breast cancer, and consisted of interviewing them after a significant event involving their cancer (such as diagnosis, or an operation). The patients were then followed up after a number of years. However, the results often proved contradictory, as has occurred in several retrospective studies. In one well-known case, Ramirez et al. (1989) found that there was a prognostic association between severe life stressors and the recurrence of breast cancer. Barraclough et al. (1992) on the other hand, found that psychosocial adversity such as depression, or a severe life event, was not conducive to a relapse of cancer and this conclusions has since been supported. "There is good evidence for any relation between stressful life events and breast cancer" (McGee 1999, p.1015).

Certain studies found that patients could be classified into different psychological groups, and that a pattern emerged in the life span of the patients in each of the groups. In one study, Greer et al. (1979) classified 69 female patients suffering from breast cancer into one of four groups , the Denial, Fighting Spirit, Stoic Acceptance and Feelings of Hopelessness groups. The Denial group consisted of those patients who rejected any evidence of their diagnosis, and didn't consider having cancer as serious. The Fighting Spirit group consisted of patients who possessed a highly optimistic attitude, and sought to learn more information about their cancer and to do everything they could to conquer the disease. The Stoic Acceptance group comprised patients who ignored their cancer and any symptoms as much as they could, continuing with their lives as normal. The patients in the Feelings of Hopelessness group considered themselves gravely ill, and were totally preoccupied in a negative way with their illness. At the completion of the study, researchers found that the patients classified in the first two groups were more likely to achieve a favourable outcome than the patients classified in the latter two groups (Greer et al. 1979). This conclusion was similar to Galen's hypothesis, which claimed that women who had cancer and died from it were more likely to have different personalities than those women who did not develop the disease or were cured of it.

Other studies reinvestigated the role of stress in cancer. Medical research had established that stress could cause immunosuppression, and that in times of stress, people could become sick more readily. Goodkin et al. (1984) postulated that an invasive cervical carcinoma could develop as a result of a mediating mechanism such as the immune system becoming adversely affected by stress. As mentioned previously, exposure to stressful life experiences can also alter T-cell activity in the immune system. Schleifer et al. (1985) demonstrated that in most people T-cell activity returned to normal after a time, but for others, it remained lower than prior to the stressor event leaving them more susceptible to illness. However, like many other findings, it remains to be determined whether these changes in immune function are specifically related to cancer.

Can the mind really play a role in cancer onset and cure? While many researchers in the field of psycho-oncology have found positive correlations between cancer and psychological factors, results overall have proved inconclusive, and in some cases, contradictory. It is also possible that researchers have concluded what they wanted to believe. . . . In those studies which have directly linked stress to cancer, stress may only be an indirect cause. People in general, when confronted with something that causes stress, tend to isolate themselves and engage in 'emotion-focused coping behaviour,' to prevent being overwhelmed by their negative emotions (Atkinson et al. 1996). Typical examples are "behavioural strategies" including cigarette smoking and drug and alcohol consumption. Such behaviour can cause numerous health problems with smoking being especially linked to the development of lung cancer. In turn, the cancer can spread to other parts of the body. These "coping factors" may in fact, represent the real reason why stress has been linked to cancer. Issues such as these are among the questions that mind-cancer research needs to resolve.

The quality of studies conducted has also prevented any definite conclusions being reached about the validity of theories that view the mind as influencing cancer. Many of these studies for example, have been criticised for poor methodology and design faults (Edelman and Kidman, 1997). Small sample sizes, the use of unvalidated instruments, no control groups, no vital information taken into account and no randomising of treatment groups may have led to errors in the calculation of results, and therefore, to questionable conclusions. Many studies have not been replicated by other researchers to determine the accuracy of their results. . . . Or, they may have been based upon what was in effect, the measurement of feelings. Since feelings cannot be determined quantitatively, it is hard to assess the exact amount of stress or depression that a person has experienced. . . . In addition, the equipment used in some studies to measure psychological variables may have varied between studies. All these factors can contribute to inconclusive outcomes.

Although verifying mind-cancer studies is problematic, medical personnel need to consider the psychology of their patients. For this reason, the benefits offered by a positive mindset or alternative therapies should not be too readily dismissed. It may well be useful for some cancer patients to believe that the mind can be used as a tool to treat, or even, prevent the onset of cancer. Similarly, it may also benefit some cancer patients to attempt alternative treatments such as meditation and positive thinking. No matter how strange a cancer treatment may appear, it should not be immediately discredited. One woman with breast cancer was able to keep her malignant tumour localised for a period of seven years, before undergoing chemotherapy and radiotherapy to finally destroy the cancer. Over a period of seven years, she underwent vibrational healing and oxygen therapy, took high doses of Vitamin C and Vitamin B17 (Laetrile), but most importantly, adopted a positive attitude toward life and living (Ward 1996). . . . Such a patient may well be an example of the phenomenon Sarafino (1990) notes of patients who appear to 'will away' cancer.

The extent to which the mind can affect cancer still remains unresolved. Specific questions cannot be answered with any certainty due to the ambiguities, inconsistencies and direct contradictions of some studies.

reveals broad findings that are worth emphasising:

* Stress can negatively affect the immune system.
* Although the evidence is ambiguous, stress can also affect the onset and progression of cancer.
* An individual's psychological profile can affect the progression of cancer in the body.

Such findings should not be ignored, but rather used to the patient's advantage.

With the advent of newer medical technology, more research and greater knowledge about how the mind works, the answers to questions in the field of psycho-oncology will hopefully be revealed.

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Monash University in Australia