WRITING IN PHARMACY (Language and Learning Online)

Writing in Pharmacy

This tutorial comprises a sample Human Behaviour essay with comments and notes designed to familiarise you with the requirements of the academic essay. The essay has been adapted from a well-regarded first-year essay.

Please note that some errors (underlined) have been deliberately included in the essay. You will need to read the accompanying comments and notes to know how to correct these.

Sample Human Behaviour essay

Read the following essay from the subject Human Behaviour. Click on the blue highlighted numbers to see comments.

Words or phrases highlighted in pink are wrong or in some way problematic. Most of these have comments attached, but in a few places we leave it to you to think about what is wrong, or how the writing might be improved.

1. 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.

5. 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 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. Barracough 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. Nevertheless, an examination of the literature that discusses these issues 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.

References:


The first thing to do in a typical **introduction** is to **introduce the topic**, and provide a little relevant background information to orient the reader. The first statement here identifies the broad topic as "cancer", with a brief description of what it is.

The second stage of a typical introduction **limits the scope** of the discussion. The next 4 sentences focus on the history of the treatment of cancer, and specifically the role of the mind in controlling the disease.

This next stage points out the **importance** or **relevance** of the topic. We don't yet know, however, exactly how the writer is going to tackle the subject.

In the final stage of the introduction, the writer gives a brief outline of the structure of the essay, and what the writer intends to achieve.

Note, however, that this plan avoids using 'I' statements ("In this essay I will ..."); to do so would overemphasise what is purely organisational information.

Instead it does the same thing in a less personal way: “This essay ... surveys .... It concludes by examining ...”.

In general,'I' is rarely used in scientific writing, where the 'facts of research' are required to speak for themselves.

Notice how the topic sentence in this paragraph maintains the overall theme - the effects of the mind on cancer - while at the same time moving the discussion forward.

If you wish to use an **acronym** like "NK" = "natural killer" in your essay, introduce it the first time by using the **full** term and adding the acronym immediately after it in brackets.

**Use the active voice and human agent(s)** where possible (i.e. "Researchers have found..." instead of impersonal constructions of the type "It has been found...". Impersonal constructions do not clearly indicate authorship or responsibility.

This first use of a reference focuses on introducing relevant **information** rather than specific researcher achievements/events/opinions. This is a typical practice in the early stages of an essay.

See [Citing previous research](<www.monash.edu.au/lls/llonline/writing/general/lit-reviews/3.xml>) on the difference between **information-prominent** and **author-prominent** citations.

(Sali, 1992, cited by Kune, 1992) is a **reference within a reference**. In general, you should avoid reporting writers at 'third-hand'; instead go to the original source if possible. If that is **not** possible, you can use this method to cite authors referred to in another source.
When using the Harvard or Author-Date system of referencing, a reference at the end of a sentence is always placed in brackets before the full stop, not after it:

This phenomenon (immunosuppression) has come to be viewed ... and cancer (Edelman, 1997).

not

This phenomenon (immunosuppression) has come to be viewed ... and cancer.
(Edelman, 1997)

Galen is a source cited by another author (Sdorow, 1995), as are "other eminent physicians and surgeons" (cited by Kune, 1992).

In formal writing it is preferable to avoid using abbreviations - use ‘that is’ rather than i.e. and ‘for example’ rather than e.g.

The pronoun this is often overused by writers. In this sentence, you may feel it is not clear what ‘this’ refers to. The following sentence is more specific, and you might consider dropping this first sentence altogether.

Author-prominent citations (see Citing previous research <www.monash.edu.au/lis/llonline/writing/general/lit-reviews/3.xml>) are appropriate at this point as the writer’s focus has now moved to the work of individual researchers.

Note that if you have cited a particular reference once already in a paragraph, it is not necessary to cite that work again in the same paragraph unless a second reference has also been cited, and you need to clarify any possible ambiguity. In this paragraph only one reference has been cited (Sklar and Anisman 1979), and the reader will naturally assume that any information in the rest of the paragraph comes from the same source.

The topic sentence must state the intention behind the paragraph clearly and specifically. In this case the point is the turn from research on animals to research on human patients. Adding a couple more words could clarify this; for example:

At that point, therefore, research was directed to cancer in human patients.

et al. is the Latin short form for ‘and others’ or ‘other writers’ and is used when more than two writers are referred to. Strictly speaking, it should only be used the second time you refer to the same source - in other words, give the full citation the first time the work is cited.

Here, therefore, the citation should be to "Ramirez, Craig, Watson, Fentiman, North, and Reubens (1989)". (Of course, the authors' initials are not included in the citation - except when two of the authors have the same surname.)

Note, too, that et al. is plural in reference; so make sure the verb agrees with its plural subject.

Transition markers such as 'on the other hand' are used to organise your argument and to emphasise particular points - e.g. cause (because, since, etc.), effect (as a result, therefore, etc.) contrast (however, on the other hand, etc.), concession (although, etc.) and example (for instance, etc.) (see also

It might be better to use 'claimed' here in place of 'found'. Vary your reporting verbs (i.e. states, claims, suggests, aintains, demonstrates, etc.), but make sure the appropriate verb is used. 'Say' and 'tell' are not used when reporting written sources.

Use a direct quote only when the wording is exceptional. Otherwise, use a paraphrase instead. A direct quote was not necessary in this case. Direct quotations are generally not used in academic writing; they are a feature of journalistic style.

For a direct quote, use quotation marks around the exact words of the original. Use three dots to indicate any omission of word(s), e.g. (“between ... and cancer”). Include the page number in the citation, after the year. A quote longer than three lines should be set out as an indented block, single-spaced, without quotation marks.

Numbers are written as words (“one”, “two” ...) up to “ten”, and thereafter usually as figures. So the writer here is correct to write “69 patients” but “four groups”.

It would be better to use a colon rather than a comma here to introduce the list that follows – like this:

“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.”

Do not use contractions in formal writing - use full forms (i.e. 'did not'

Topic sentences in the form of questions are not appropriate in formal scientific writing. They look lazy or journalistic. Make a clear statement to introduce the topic of the paragraph. In this case the second sentence in this paragraph would make a better topic sentence:

While many researchers in the field of psycho-oncology have found positive correlations between cancer and psychological factors, results overall have proved inconclusive.

Keep items in a list parallel in grammatical form. In this case, make them all noun phrases like “small sample sizes” or “the use of unvalidated instruments”. Here, rather than using “no ...” it would be better to write:

the absence of control groups and the failure to take vital information into account and randomise treatment groups...

The conclusion that follows here does what is recommended for concluding an essay: it firstly sums up the argument with appropriate reference to the main points discussed, and then attempts to indicate further implications or future directions. However, the final statement is rather glib – that is, it looks good, but doesn't say very much. This weakens the overall impact. It might be better to offer a more cautious, reasoned statement at the end:

With the advent of better medical technology and continuing research, answers to some of the questions in the field of mind-cancer research may become clarified. In the meantime, the professional desire for verifiable results should always be balanced against the patient's well-being.
Notice the use of cautious language here. Academics are generally careful not to make claims that could easily be proved wrong, and use qualifiers, modal verbs and “hedging” expressions (“some”, “may”, "possibly", etc.) to do this.

Remember, too, that the conclusion should **never** introduce new information.

Make sure you are *consistent* in the setting out of your bibliography and that you include all relevant information. Once you adopt a particular way of setting out the information, don't chop and change between items.

Note that **article titles** are typically formatted in lower case apart from the initial capital and the capital after the colon:


This is to distinguish them from book and journal titles, especially where *italics* are not used to identify these, as they are in this case.

The name of the **publisher** must be provided with the City of publication. See the entry for "Home, R." as an example.

**Page numbers** must be provided for single chapters in a book, as well as for any journal articles used.

**City of publication** must be provided with the name of the publisher. See the entry for "Home, R." as an example.