

BURDEN OF CANCER AND PATIENT COPING MECHANISM: ANY NEED FOR COUNSELLORS?

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ABSTRACT

Cancers comprise a large family of diseases that involve abnormal cell growth with the potential to invade or spread to other parts of the body. As the second leading cause of deaths globally in recent time, this paper therefore examined the burden of cancer and patient coping mechanism. Also, the study discusses the roles of counsellors and the implications of cancer burden and treatment for counselling. As cancer treatment costs increase, prevention and early detection efforts become more cost-effective, and potentially cost-saving. It was uncovered that the economic burdens of cancer emerges in the area of health spending burden and cancer vaccination or treatment costs on citizens and the government of nations globally. Many treatment options for cancer exist. However, some of them including surgery, chemotherapy, radiation therapy, hormonal therapy, targeted therapy and palliative care were discussed. Based on the review, it was concluded that the economic burden of cancer on developing and developed countries globally is rising and raising concerns among stakeholders. Professional counsellors, practicing counsellors and counsellor educators all have roles to play through the provision of information services to people. Also, orientation of patients about coping behaviours needed to lessen the cost of treatment on patients is another key area that counsellors are needed. It was suggested that counsellor educators, health educators and health practitioners, such as registered nurses, doctors and consultants, should try as much as they can to provide people in rural and semi-urban areas the knowledge of the various prevention and early detection techniques of cancer.

Keywords: Burden, Cancer, Patient, Coping Mechanism, Counsellors.

1. INTRODUCTION

Cancer is a disease that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs (Kocarnik *et al*, 2022). Another name for it is a neoplasm and malignant tumour (Xi & Xu, 2021). Globally, cancer is the second leading cause of death, accounting for an estimated 9.6 million deaths, or one in six deaths, in 2018 (Sharma, *et al*. 2020). Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women (Uchendu, 2020). [Tobacco use](#) is the cause of about 22% of cancer deaths. Another 10% are due to [obesity](#), poor [diet](#), [lack of physical activity](#) or [excessive drinking](#) of alcohol. Other

factors include certain infections, exposure to [ionizing radiation](#), and environmental pollutants (Okeke, *et al.*, 2020).

In the [developing world](#), 15% of cancers are due to infections such as [Helicobacter pylori](#), [hepatitis B](#), [hepatitis C](#), [human papillomavirus infection](#), [Epstein–Barr virus](#) and [human immunodeficiency virus](#) (HIV) (de Martel *et al.*, 2020). These factors act, at least partly, by changing the [genes](#) of a cell (Okeke, *et al.*, 2020). Typically, many genetic changes are required before cancer develops. Approximately 5–10% of cancers are due to inherited genetic defects. Cancer can be detected by certain signs and symptoms or screening tests. It is then typically further investigated by [medical imaging](#) and confirmed by [biopsy](#) (Xi & Xu, 2021).

The risk of developing certain cancers can be reduced by not smoking, maintaining a healthy weight, limiting alcohol intake, eating plenty of vegetables, fruits, and [whole grains](#), eating [resistant starch](#), [vaccination](#) against certain infectious diseases, limiting consumption of [processed meat](#) and [red meat](#), and limiting exposure to direct sunlight (de Martel *et al.*, 2020; Xi & Xu, 2021). Early detection through screening is useful for [cervical](#) and [colorectal cancer](#). The benefits of screening for breast cancer are controversial. Cancer is often treated with some combination of [radiation therapy](#), surgery, [chemotherapy](#) and [targeted therapy](#). Pain and symptom management are an important part of care (Uchendu, 2020). [Palliative care](#) is particularly important in people with advanced disease. The chance of survival depends on the type of cancer and [extent of disease](#) at the start of treatment. In children under 15 at diagnosis, the [five-year survival rate](#) in the [developed world](#) is on average 80%. For cancer in the United States, the average five-year survival rate is 66% for all ages. In 2015, about 90.5 million people worldwide had cancer. In 2019, annual cancer cases grew by 23.6 million people and there were 10 million deaths worldwide, representing over the previous decade increases of 26% and 21%, respectively (Bosland *et al.*, 2021).

The most common types of cancer in males are [lung cancer](#), [prostate cancer](#), [colorectal cancer](#), and [stomach cancer](#). In females, the most common types are [breast cancer](#), colorectal cancer, [lung cancer](#), and [cervical cancer](#). If [skin cancer](#) other than [melanoma](#) were included in total new cancer cases each year, it would account for around 40% of cases. In children, [acute lymphoblastic leukemia](#) and [brain tumors](#) are most common, except in Africa, where [non-Hodgkin lymphoma](#) occurs more often (Xi & Xu, 2021). In 2012, about 165,000 children under 15 years of age were diagnosed with cancer. The risk of cancer increases significantly with age, and many cancers occur more commonly in developed countries. Rates are increasing as [more people live to an old age](#) and as lifestyle changes occur in the developing world.

The cancer burden continues to grow globally, exerting tremendous physical, emotional and financial strain on individuals, families, communities and health systems (De Vrieze *et al.*, 2020; Rezapour, *et al.*, 2021). Many health systems in low- and middle-income countries are least prepared to manage this burden, and large numbers of cancer patients globally do not have access to timely quality diagnosis and treatment (Soerjomataram, & Bray, 2021). In countries where health systems are strong, survival rates of many types of cancers are improving thanks to accessible early detection, quality treatment and survivorship care (Michaeli, *et al.*, 2022). The global total economic costs of cancer were estimated at [US\\$1.16 trillion](#) (equivalent to \$1.56 trillion in 2022) per year as of 2010 (Chen, *et al.*, 2023). It is against this backdrop that this study examines burden of cancer and patient coping mechanism. Therefore, this paper examines the burden of cancer and patient coping mechanism. The specific objectives are to:

- discuss the cost or burden of cancer

- examine patient coping mechanism
- examine the roles of counsellors and the implications of cancer burden and treatment for counselling.

Conceptual Issues on Cancer

The word “Cancer” comes from the ancient Greek *καρκίνοσ*, meaning 'crab' and 'tumor' (Uhlenhopp, *et al.*, 2020). Greek physicians [Hippocrates](#) and [Galen](#), among others, noted the similarity of crabs to some tumors with swollen veins. The word was introduced in English in the modern medical sense around 1600 (Kocarnik *et al.*, 2022). Cancers comprise a large family of diseases that involve abnormal [cell growth](#) with the potential to invade or spread to other parts of the body (Huang *et al.*, 2021). They form a subset of [neoplasms](#). A neoplasm or tumor is a group of cells that have undergone unregulated growth and will often form a mass or lump, but may be distributed diffusely. All tumor cells show the [six hallmarks of cancer](#). These characteristics are required to produce a malignant tumor (Ahmed, *et al.*, 2022). They include:

- [Cell growth and division](#) absent the proper signals
- Continuous growth and division even given contrary signals
- Avoidance of [programmed cell death](#)
- [Limitless number of cell divisions](#)
- Promoting [blood vessel construction](#)
- [Invasion](#) of tissue and formation of [metastases](#)

The progression from normal cells to cells that can form a detectable mass to outright cancer involves multiple steps known as malignant progression (Huang *et al.*, 2021). When cancer begins, it produces no symptoms. Signs and symptoms appear as the mass grows or [ulcerates](#). The findings that result depend on cancer's type and location. Few symptoms are [specific](#). Many frequently occur in individuals who have other conditions. Cancer can be difficult to diagnose and can be considered a "[great imitator](#)." People may become anxious or depressed post-diagnosis. The risk of suicide in people with cancer is approximately double.

Local symptoms may occur due to the mass of the tumor or its ulceration. For example, mass effects from lung cancer can block the [bronchus](#) resulting in cough or [pneumonia](#); [esophageal cancer](#) can cause narrowing of the [esophagus](#), making it difficult or painful to swallow; and [colorectal cancer](#) may lead to narrowing or blockages in the [bowel](#), affecting bowel habits. Masses in breasts or testicles may produce observable lumps (Uhlenhopp, *et al.*, 2020). [Ulceration](#) can cause bleeding that can lead to symptoms such as [coughing up blood](#) (lung cancer), [anemia](#) or [rectal bleeding](#) (colon cancer), [blood in the urine](#) (bladder cancer), or [abnormal vaginal bleeding](#) (endometrial or cervical cancer). Although localized pain may occur in advanced cancer, the initial tumor is usually painless. Some cancers can cause a buildup of fluid within the chest or [abdomen](#) (Ahmed, *et al.*, 2022).

Systemic symptoms may occur due to the body's response to the cancer. This may include fatigue, unintentional weight loss, or skin changes. Some cancers can cause a systemic inflammatory state that leads to ongoing muscle loss and weakness, known as [cachexia](#). Some cancers, such as [Hodgkin's disease](#), [leukemias](#), and [liver](#) or [kidney cancers](#), can cause a persistent [fever](#). Some systemic symptoms of cancer are caused by hormones or other molecules produced by the tumor, known as [paraneoplastic syndromes](#). Common paraneoplastic syndromes include [hypercalcemia](#), which can cause [altered mental state](#), constipation and dehydration,

or [hyponatremia](#), which can also cause altered mental status, vomiting, headaches, or seizures (Ahmed, *et al.*, 2022).

[Metastasis](#) is the spread of cancer to other locations in the body. The dispersed tumors are called metastatic tumors, while the original is called the primary tumor (Huang *et al.*, 2021). Almost all cancers can metastasize. Most cancer deaths are due to cancer that has metastasized. Metastasis is common in the late stages of cancer and it can occur via the blood or the [lymphatic system](#) or both (Ahmed, *et al.*, 2022). The typical steps in metastasis are local [invasion](#), [intravasation](#) into the blood or lymph, circulation through the body, [extravasation](#) into the new tissue, proliferation and [angiogenesis](#) (Kocarnik *et al.*, 2022). Different types of cancers tend to metastasize to particular organs, but overall the most common places for metastases to occur are the [lungs](#), [liver](#), brain, and the [bones](#).

Economic Burden of Cancer

The economic burden of cancer is substantial in all countries and reflects health care spending as well as lost productivity due to morbidity and premature death from cancer (Yabroff *et al.*, 2020; Huang *et al.*, 2021). As cancer treatment costs increase, prevention and early detection efforts become more cost-effective, and potentially cost-saving (Rezapour, *et al.*, 2021). Cancer results in economic burden for patients, healthcare systems, and countries due to healthcare spending, and productivity losses from morbidity and premature mortality (Uhlenhopp, *et al.*, 2020). Economic analyses can inform resource allocation decisions and investments in cancer control programs, including prevention, early detection, treatment, survivorship, and end-of-life care (Michaeli, *et al.*, 2022). Hence, the economic burden of cancer can be discussed in to major areas: health spending and cancer vaccination costs.

Health spending burden: The global economic burden of cancer is unknown, although data are available in some countries. In the US in 2017, estimated cancer healthcare spending was US\$161.2 billion; productivity loss from morbidity, US\$30.3 billion; and premature mortality, US\$150.7 billion (Chen, *et al.*, 2023). The economic burden of cancer in the US is approximately 1.8% of gross domestic product (GDP) (Rezapour, *et al.*, 2021). In the European Union, healthcare spending was €57.3 billion, and productivity losses due to morbidity and premature death were €10.6 billion and €47.9 billion, respectively. With informal care costs of €26.1 billion, total burden rose to €141.8 billion, 1.07% of GDP (Soerjomataram, & Bray, 2021).

Cancer vaccination or treatment costs: Cancer treatment costs are increasing worldwide, making prevention and screening efforts more cost-effective and sometimes cost-saving (De Vrieze *et al.*, 2020). For example, when more expensive chemotherapies were considered in comparisons of colorectal cancer screening to no screening, treatment savings from preventing advanced cancer and death more than doubled in the US (Rezapour, *et al.*, 2021). Vaccination against human papillomavirus infection, which is responsible for most cervical cancers, in 73 countries supported by Gavi, the Vaccine Alliance, could avert nearly \$5.6 billion in treatment costs and productivity losses between 2001–2020. Smoking is a strong risk factor for lung and other cancers. The cost of smoking globally is nearly \$2.05 trillion annually, almost 2% of the world's economic output (Chen, *et al.*, 2023).

Patient Coping Mechanism

Many treatment options for cancer exist. The primary ones include surgery, [chemotherapy](#), [radiation therapy](#), [hormonal therapy](#), [targeted therapy](#) and [palliative care](#) (Kocarnik *et al.*, 2022). Which treatments are used depends on the type, location and grade of the

cancer as well as the patient's health and preferences. The [treatment intent](#) may or may not be curative (Huang et al., 2021). Some of the treatment or patient coping mechanism can be adopted are discussed as follows:

Chemotherapy: [Chemotherapy](#) is the treatment of cancer with one or more [cytotoxic anti-neoplastic](#) drugs ([chemotherapeutic agents](#)) as part of a [standardized regimen](#) (Huang *et al.*, 2021). The term encompasses a variety of drugs, which are divided into broad categories such as [alkylating agents](#) and [antimetabolites](#) (Xi & Xu, 2021). Traditional chemotherapeutic agents act by killing cells that divide rapidly, a critical property of most cancer cells. It was found that providing combined cytotoxic drugs is better than a single drug, a process called the [combination therapy](#), which has an advantage in the statistics of survival and response to the tumor and in the progress of the disease (Ayandipo *et al.*, 2020).

[Targeted therapy](#) is a form of chemotherapy that targets specific molecular differences between cancer and normal cells. The first targeted therapies blocked the [estrogen receptor](#) molecule, inhibiting the growth of breast cancer (Ahmed, *et al.*, 2022). Another common example is the class of [Bcr-Abl inhibitors](#), which are used to treat [chronic myelogenous leukemia](#) (CML). Currently, targeted therapies exist for many of the most common cancer types, including [bladder cancer](#), breast cancer, [colorectal cancer](#), [kidney cancer](#), [leukemia](#), [liver cancer](#), lung cancer, [lymphoma](#), [pancreatic cancer](#), [prostate cancer](#), [skin cancer](#), and [thyroid cancer](#) as well as other cancer types (Uhlenhopp, *et al.*, 2020).

The efficacy of chemotherapy depends on the type of cancer and the stage. In combination with surgery, chemotherapy has proven useful in cancer types including breast cancer, colorectal cancer, [pancreatic cancer](#), [osteogenic sarcoma](#), [testicular cancer](#), ovarian cancer and certain lung cancers. Chemotherapy is curative for some cancers, such as some [leukemias](#), ineffective in some [brain tumors](#), and needless in others, such as most [non-melanoma skin cancers](#) (Huang *et al.*, 2021). The effectiveness of chemotherapy is often limited by its toxicity to other tissues in the body. Even when chemotherapy does not provide a permanent cure, it may be useful to reduce symptoms such as pain or to reduce the size of an inoperable tumor in the hope that surgery will become possible in the future.

Radiation: [Radiation therapy](#) involves the use of [ionizing radiation](#) in an attempt to either cure or improve symptoms (Uhlenhopp, *et al.*, 2020). It works by damaging the DNA of cancerous tissue, causing [mitotic catastrophe](#) resulting in the death of the cancer cells. To spare normal tissues (such as skin or organs, which radiation must pass through to treat the tumor), shaped radiation beams are aimed from multiple exposure angles to intersect at the tumor, providing a much larger dose there than in the surrounding, healthy tissue. As with chemotherapy, cancers vary in their response to radiation therapy. Radiation therapy is used in about half of cases (Ahmed, *et al.*, 2022). The radiation can be either from internal sources ([brachytherapy](#)) or external sources. The radiation is most commonly low energy X-rays for treating skin cancers, while higher energy X-rays are used for cancers within the body. Radiation is typically used in addition to surgery and or chemotherapy. For certain types of cancer, such as early [head and neck cancer](#), it may be used alone. For painful [bone metastasis](#), it has been found to be effective in about 70% of patients (Bosland et al., 2021).

Surgery: Surgery is the primary method of treatment for most isolated, solid cancers and may play a role in palliation and prolongation of survival (Kocarnik et al, 2022). It is typically an important part of definitive diagnosis and staging of tumors, as biopsies are usually required. In localized cancer, surgery typically attempts to remove the entire mass along with, in certain

cases, the [lymph nodes](#) in the area. For some types of cancer this is sufficient to eliminate the cancer.

Palliative care: [Palliative care](#) is treatment that attempts to help the patient feel better and may be combined with an attempt to treat the cancer. Palliative care includes action to reduce physical, emotional, spiritual and psycho-social distress (Bosland et al., 2021). Unlike treatment that is aimed at directly killing cancer cells, the primary goal of palliative care is to improve [quality of life](#). People at all stages of cancer treatment typically receive some kind of palliative care. In some cases, [medical specialty professional organizations](#) recommend that patients and physicians respond to cancer only with palliative care. This applies to patients who: display low [performance status](#), implying limited ability to care for themselves; received no benefit from prior [evidence-based treatments](#); are not eligible to participate in any appropriate [clinical trial](#); and no strong evidence implies that treatment would be effective (Ayandipo *et al.*, 2020).

Palliative care may be confused with [hospice](#) and therefore only indicated when people approach [end of life](#) (Uhlenhopp, *et al.*, 2020). Like hospice care, palliative care attempts to help the patient cope with their immediate needs and to increase comfort. Unlike hospice care, palliative care does not require people to stop treatment aimed at the cancer. Multiple national [medical guidelines](#) recommend early palliative care for patients whose cancer has produced distressing symptoms or who need help coping with their illness. In patients first diagnosed with metastatic disease, palliative care may be immediately indicated. Palliative care is indicated for patients with a prognosis of less than 12 months of life even given aggressive treatment (Xi & Xu, 2021).

Immunotherapy: A variety of therapies using [immunotherapy](#), stimulating or helping the [immune system](#) to fight cancer, have come into use since 1997. Approaches include [antibodies](#), checkpoint therapy, and [adoptive cell transfer](#) (Ayandipo *et al.*, 2020).

Laser therapy: [Laser](#) therapy uses high-intensity light to treat cancer by shrinking or destroying tumors or precancerous growths (Huang *et al.*, 2021). Lasers are most commonly used to treat superficial cancers that are on the surface of the body or the lining of internal organs. It is used to treat basal cell skin cancer and the very early stages of others like cervical, penile, vaginal, vulvar, and non-small cell lung cancer. It is often combined with other treatments, such as surgery, chemotherapy, or radiation therapy. [Laser-induced interstitial thermotherapy](#) (LITT), or interstitial laser [photocoagulation](#), uses lasers to treat some cancers using hyperthermia, which uses heat to shrink tumors by damaging or killing cancer cells. Laser is more precise than surgery and cause less damage, pain, bleeding, swelling, and scarring (Kocarnik et al, 2022). A disadvantage is surgeons must have specialized training. It may be more expensive than other treatments.

Alternative medicine: [Complementary and alternative cancer treatments](#) are a diverse group of therapies, practices and products that are not part of conventional medicine (Uhlenhopp, *et al.*, 2020). "Complementary medicine" refers to methods and substances used along with conventional medicine, while "alternative medicine" refers to compounds used instead of conventional medicine (Xi & Xu, 2021). Most complementary and alternative medicines for cancer have not been studied or tested using conventional techniques such as clinical trials. Some alternative treatments have been investigated and shown to be ineffective but still continue to be marketed and promoted (Ayandipo *et al.*, 2020). Cancer researcher Andrew J. Vickers stated,

"The label 'unproven' is inappropriate for such therapies; it is time to assert that many alternative cancer therapies have been 'disproven' (Ahmed, *et al.*, 2022).

Counsellor Roles and Implications for Counselling

Counsellor educators have roles to play in providing some of their relevant services – information, orientation and health education services to old and young women in rural and semi-urban areas. Specifically, results would sensitize practicing counsellors towards the provision of information services on cancer examination for married and unmarried females across the nations of the world. Moreso, it is imperative for counsellors to collaborate with Non-Governmental Organisations (NGOs), health educators in the provision of quality health information services to encourage early detection of cancer through self-check and regular medical check-ups. Consequently, these services would create an avenue for citizens living in rural and semi-urban areas to be sensitized on the knowledge and practice of cancer prevention through, healthy dieting, healthy living and medication.

Knowledge and willingness to practice healthy eating habits and exercising is highly imperative in early detection of cancerous growth or tumors in increasing the possibilities of treatment and cancer survival among people. Hence, failure to provide adequate counselling services to patients at risk of one or more types of cancer could increase the burden of cancer on citizens. The consequence of such failure is that the cost of treatment and cancer management in most cases outweighs the cost of prevention through early detection, regular and periodic medical checkups.

CONCLUSION

Early detection of cancer is one of the cost-effective ways of preventing cancer among people. Based on the review, it was concluded that the economic burden of cancer on developing and developed countries globally is rising and raising concerns among stakeholders. Professional counsellors, practicing counsellors and counsellor educators all have roles to play through the provision of information services to people. Also, orientation of patients about coping behaviours needed to lessen the cost of treatment on patients is another key area that counsellors are needed.

RECOMMENDATIONS

Arising from findings, the following recommendations were made:

1. Counsellor educators, health educators and health practitioners, such as registered nurses, doctors and consultants, should try as much as they can to provide people in rural and semi-urban areas the knowledge of the various prevention and early detection techniques of cancer.
2. Counsellors should recognize that practice of healthy eating, active lifestyle and regular exercising, regular medical checkups which are recommended practices for cancerous growth prevention and detection are traceable to knowledge and attitude towards cancer. Hence, the provision of orientation, counselling and information services by practicing counsellors and counsellor educators is needful in promoting the safe and healthy living lifestyle.
3. The government and health practitioners through the media should endeavour to sensitize patients about the need to take medical checkups seriously.

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