**Maternal, Infant and Adolescent Nutrition**

**Introduction**

This paper seeks to create awareness on the importance of nutritional Complementary and Alternative Medicine to women, infants, and adolescents. To make it more comprehensive, the paper uses cancer as a sample disease whose intervention via the nutritional CAM is observable at the community level and its impact on maternal, infant and adolescent health is devastating. Cancer is one of the leading cause of morbidity and mortality globally with the newly reported cases expected to increase significantly soon (Clarke, Black, Stussman, Barnes, and Nahin, 2015). A good example is breast cancer among women, prostate cancer among the adolescent's lung cancer among other types of cancer common among the infants and extending to women and adolescents. All the cancer therapeutic interventions for such patients are increasingly becoming sophisticated and detrimental regarding their side effects including pharmacological, radiation and surgical interventions. The complications arise because all types of cancer are different and it is difficult to target individual cancer cells with precision without interfering with the normal cells physically or at the genetic level (Clarke et al., 2015). Most of the uncured cancer cells, therefore, eventually convert into chronic conditions which constantly interfere with the patient’s treatment outcomes and lower the quality of life. Furthermore, these therapeutic interventions are associated with frequent incidences of malnutrition and metabolic disorders which result from the cancerous cells or the nature of treatment undergone by the infant, woman or adolescent (Hall, McKenna & Griffiths, 2012). From these findings, it is clear that a new approach with less adverse effects and more beneficial treatment outcomes is an important aspect of research in public nutrition. The purpose of this paper is to describe evidence-based nutritional guidelines for a public service campaign on the importance of nutrition complementary and Alternative Medicine (CAM) in the prevention and management of nutritional disorders affecting maternal, infant and adolescent health.

**Nutritional CAM**

Nutrition is an important concept not only in cancer treatment but also in the overall maintenance of good health among women, infants and adolescents. For those with cancer, using nutritional supplements, diets, vitamins, minerals and special diets has proved to be of great significance in minimizing the impacts of cancer and therapy-related side effects (Posadzki et al., 2013). In fact, dietary CAM has generated the most widespread attention among users and non-users due to its high probability of interacting with the cancer treatments. Dietary supplements in this regard refer to nutritional ingredients administered orally to replace a missing food component in the normal diet and include minerals, herbal preparations, amino acids, enzymes, metabolites, organ tissues and glandular extracts among other substances. These supplements that can be used in the nutritional CAM can be in the form of soft gels, gelcaps, liquids, tablets, capsules, and powders. The use of nutritional CAM has increased significantly in the recent past among oncology patients with about 26% to 81% of all cancer patients being put on supplements like vitamins, minerals, and multivitamins. In one study involving cancer patients in the process of treatment documented a combined use of CAM modalities at about 91% (Clarke et al., 2015). Furthermore, about 14% to 32% of all new cases of cancer diagnosis are advised to initiate a dietary supplement program to enable them to manage the symptoms and complications caused by the condition (Posadzki et al., 2013). The use of diet supplements does not stop with diagnosis despite the fact that it can be initiated even before the symptoms start manifesting.

**Benefits of Nutritional CAM**

The advantages of using nutritional CAM among women, infants and adolescents are observed by cancer survivors during and after cancer treatment with the classical therapeutic interventions. Specifically, survivors of breast and prostate cancer have been specific in advocating for the implementation of diets CAMs that aid in reducing the risk of suffering from such cancers and other predisposing factors after diagnosis or within the first six months following diagnosis. A study done on breast cancer survivors indicated improvement in health among half of the participants following the administration of exercise and diet programs after diagnosis (Langius et al., 2013). Unhealthy behaviors like smoking and alcohol consumption also form a critical component of nutritional intake whose regulation can act as an impact in nutritional CAM. The regulation of such habits among others play a significant role in creating positive change regarding the improvement of health outcomes among cancer patients (Paccagnella et al., 2010). Most patients who seek nutritional CAM are interested in restoring their sense of control and stand a chance to secure a healthy future.

Good nutrition administered through the nutritional CAM is important since it influences the way the body tolerates certain food materials and the way the body uses available nutrients (Posadzki, Watson, Alotaibi, and Ernst, 2013). The nutritional needs vary from individual to individual during cancer progression through eating well during cancer treatment is good for the restoration of energy and better outcomes. Furthermore, good nutrition through related CAM aids in the maintenance of weight while helping the body to store its nutrients (Garg, Yoo & Winquist, 2010). As stated earlier, proper nutritional value helps the body to competently deal with adverse effects of cancer treatment with limited risks of infection and faster potential for recovery.

**Public Service Nutritional CAM Campaign**

The public should be informed on the importance of proper nutrition for infants, women, and adolescents alongside the specific benefits for them to make informed choices on what nutritional substances to take and for what reason. During this program, the public should be informed of the importance of the food components in great details, especially those suffering from or at risk of suffering from different types of cancer (Posadzki et al., 2013). For instance, proteins are an important food component which is required for overall growth and repair of body tissues in addition to providing personal immunity. Lack of adequate amounts of proteins in the body may trigger muscle breakdown to obtain fuel, making it more difficult to recover from different types of illnesses as well as decreased ability to resist infections (Garg, Yoo & Winquist, 2010). Cancer patients require more proteins than normal persons. Much of these proteins are required after surgical operations to or radiations and chemotherapy to provide adequate healing to the tissues and protect the tissues against infection (Paccagnella et al., 2010). The types of food that are rich in such proteins include fish, poultry, eggs, nut butter, beans peas and lentils and soy foods among others.

Fats are other components of nutritional CAM which play essential roles as sources of stored energy and body insulation. These fats also transport some types of vitamins within the body. The monounsaturated and polyunsaturated fats are more beneficial to the body than the saturated fats also referred to as trans fats (Langius et al., 2013). Sources of monounsaturated fats include vegetable oils like canola, peanut, and vegetable oils while the polyunsaturated fats include sunflower oil, corn oil, and flaxseed.

Carbohydrates are also an important component of nutritional CAM for ensuring better health outcomes not only for cancer patients but also for healthy individuals who would wish to continue enjoying such health (Hall, McKenna & Griffiths, 2012). These sources of nutritional value form the most important energy source, giving the body adequate fuel to perform all the functions that regulate the quality of life. Physical activity, for instance, and organ function all require energy fueled by the carbohydrates (Paccagnella et al., 2010). Carbohydrates come in the form of fruits, vegetables and whole grains alongside vitamins, minerals, fiber, and phytonutrients. Another nutrient which is majorly forgotten in most therapeutic designs but essential for nutritional CAM is water and related liquids or fluids (Horneber et al., 2012). For the body cells to function, they need adequate water, and failure to take these fluids leads to dehydration which can cause a medical emergency like hypovolemic shock requiring medical intervention. Dehydration causes a mineral imbalance, a situation which may delay healing or aggravate a medical condition like kidney disease. Some people argue that water can be obtained from the food consumed by an individual (Hall, McKenna & Griffiths, 2012). However, it should be noted that such water is never sufficient and an individual requires about 8-ounce glasses of water on a daily basis to ensure that the body cells obtain the adequate volumes of water they need for proper functioning. Special requirements of water may be advised if the patient is vomiting, with diarrhea or unable to freely eat adequate amounts of food for different reasons (Garg, Yoo & Winquist, 2010). People who may not be eating much can be advised to take soups, milk, ice cream and gelatin among other fluids to subsidize the number of liquids taken.

Vitamins and minerals are also an important component of nutritional CAM since they help the body to function properly and minimize incidences of nutritional disorders (Posadzki et al., 2013). Even though these vitamins can adequately be obtained from balanced diets, some individuals may require them in supplementary forms as pills or liquid preparations in situations of significant deficiencies (Horneber et al., 2012). Antioxidants and herbs also form important components of the nutritional CAM, and their effects cannot be underestimated in nutritional therapy. For infants, however, breast milk is the perfect feeding option due to its nutritional composition which includes all the important nutritional requirements for the healthy growth and development of the infant. It advisable for such infants to be breastfed until they are six months old for them to develop a fully developed immune system (Garg, Yoo & Winquist, 2010).

**Conclusion**

Nutritional CAM revolves around using diet designs to provide therapy to ailing patients without having to subject the patients to pharmacotherapies. Pharmacological interventions have been shown to exhibit adverse side effects which impact negatively on the maternal, infant and adolescent patient outcomes. Since nutritional CAM is cost-effective and presents with little or no adverse effects, it is easier to be adopted through public service campaigns.

**References**

Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). Trends in the use of complementary health approaches among adults: United States, 2002–2012. *National Health Statistics Reports*, (79), 1.

Garg, S., Yoo, J., & Winquist, E. (2010). Nutritional support for head and neck cancer patients receiving radiotherapy: a systematic review. *Supportive Care in Cancer*, *18*(6), 667-677.

Hall, H. G., McKenna, L. G., & Griffiths, D. L. (2012). Midwives’ support for complementary and alternative medicine: a literature review. *Women and Birth*, *25*(1), 4-12.

Horneber, M., Bueschel, G., Dennert, G., Less, D., Ritter, E., & Zwahlen, M. (2012). How many cancer patients use complementary and alternative medicine: a systematic review and metaanalysis. *Integrative Cancer Therapies*, *11*(3), 187-203.

Langius, J. A., Zandbergen, M. C., Eerenstein, S. E., van Tulder, M. W., Leemans, C. R., Kramer, M. H., & Weijs, P. J. (2013). Effect of nutritional interventions on nutritional status, quality of life and mortality in patients with head and neck cancer receiving (chemo) radiotherapy: a systematic review. *Clinical Nutrition*, *32*(5), 671-678.

Paccagnella, A., Morello, M., Da Mosto, M. C., Baruffi, C., Marcon, M. L., Gava, A., ... & Giometto, M. (2010). Early nutritional intervention improves treatment tolerance and outcomes in head and neck cancer patients undergoing concurrent chemoradiotherapy. *Supportive Care in Cancer*, *18*(7), 837-845.

Posadzki, P., Watson, L. K., Alotaibi, A., & Ernst, E. (2013). Prevalence of use of complementary and alternative medicine (CAM) by patients/consumers in the UK: Systematic review of surveys. *Clinical Medicine*, *13*(2), 126-131.