The multidisciplinary approach to teaching cancer prevention

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As a lecturer at the Semmelweis University, my field of research is the multidisciplinary approach to the prevention of malignant tumours. I have been committed to dispelling the general misconception about malignant tumours, which is cancer is always a fatal disease. In my work I strive to reduce the high number of people suffering from cancer through knowledge and education.

The goal of the programme is to transfer up-to-date knowledge about cancer prevention to students at the Faculty of Health Sciences of the Semmelweis University. The students need to have a better understanding of the benefits of complimentary lifestyle therapies alongside conventional treatment for cancer. The programme supports the recent research findings of the World Health Organisation which state that among the factors influencing our health; lifestyle plays a remarkable role. (12, 19)

In the world of science, the first decade of the 21st century was named the Decade of Health Behaviour, referring to the fact that the quality of our lives relies more in the way of life we choose for ourselves. This recognition challenges the theory and practice of medicine as well as the education of doctors and applied research methodology. Medicine is shifting its paradigm, which reflects above all, a new attitude towards behaviour as bio psychological phenomenon. (6, 8)

A bio psychological approach has existed in medicine for a long time. The inseparable unit of body and soul has been observed in practice by some doctors through the ages; however, there has been little scientific evidence that supported such thinking. (18)

Nowadays the physiological and biochemical effects of behavioural processes can also be proved with scientific methods. Since the subject of medicine is the human being in a bio psychological state, it is mainly medical science that implies the possibility of integrating biological, scientific, behavioural and sociological paradigms. (14) Healing has to stand on a solid scientific basis, and sociological knowledge also has to be applied when there is a discussion between a doctor and a patient. There are always questions raised during healing, among them there are psychological, sociological, ethical, cultural and anthropological issues. This is well referenced in the definition of behavioural medicine. At a Yale-conference in 1977 the essence of behavioural medicine was formulated as the following: It is an interdisciplinary field whose aim is to apply (in an integrated way) all we know about behavioural and biomedicine and their methodology in the course of problems related to health and illness in every field of prevention, diagnosis, healing and rehabilitation. (16)

Behavioural medicine is in connection with almost all fields and specialisations of medical science, traditionally this relation is very close with psychiatry. (9)

If a person does not have a healthy lifestyle, chronic diseases may appear earlier in life. Nutrition plays a significant role in avoiding the development of such disease processes. (19)

Malignant tumours are multifactorial. Education, prevention and treatment also need to be multifactorial in its approach, as healing can only be achieved by treating all the emerging symptoms at the same time.

Considering all these factors, a new curriculum was introduced which is still regarded to be a unique programme in higher education in Hungary.

In the second semester of the academic year 2003/2004, a course was organised at the Faculty of Health Sciences of the Semmelweis University under the title: ‘Multidisciplinary Approach of Tumour Prevention’.

Aim of the course: It has been our aim to help students in their future professional practice to demonstrate health-promoting behaviour and contribute to effective prevention, as well as to increase their understanding of the development of tumours. At the completion of the course, the student is able to provide information and advice to healthy individuals as well as ill people of different ages and to be able to implement a holistic approach which considers one’s body, soul and consciousness. Furthermore, students are prepared to teach others about the prevention and treatment of cancer.

The programme calls attention to health behaviour factors which could possibly have an influence on the development of malignant tumours. It includes the importance of proper nutrition, environmental hazards, the role of regular physical exercise in cancer prevention, enhancing treatment effectiveness, psychic factors, and the role of stress in the development of malignant tumours.

The programme is a multidisciplinary approach to the understanding of the development of malignant tumours, as well as to their prevention and general health promotion. It relies on the findings of psycho-neuroimmunology in oncology. In the book edited by Urbán it is stated that there is interrelation between the soul and the immune system and presents factors of lifestyle and health behaviour which may influence the development of a malignant tumour. (21)

In the belief that primary, secondary and tertiary factors all play an important role in cancer prevention; this programme attaches great importance to the individual responsibility of all health care professionals working in health care institutions. Their exemplary health behaviour is one of the most effective tools in oncological health prevention and in psycho-educative activities.

Student’s population:
Full-time and part-time students: Registered Nurses, Midwives, Physiotherapists, Dieticians, Public Health Inspectors, Health Visitors, Health Care Teachers, Ambulance Officers, Physicians

Number of classes: 60, Credits: 2
The course was developed by Csaba Avramucz, (expert lecturer)

Views and knowledge imparted during the course:
- The expression of "holism" and the "holistic" view are interpreted.
- The qualities and characteristics of a health care specialist who practice a holistic approach.
- The components of the bio psychosocial model.
- The complex understanding of the notion of “health” in the western and Asian way of interpretation. (7, 13)
Health: prayer, dream, sleep, laughing, play, dance, massage, vitamins, enzymes, mineral substances, physical exercises, clear water, appropriate diet, clean air, breathing exercises, positive thinking, relaxation, visualization, stress-management, creative thinking, poetry, humour, singing, music (22)

Unfortunately, we often fail to link mental health as an organic part of the healthy way of life. The following considerations are covered in the course curriculum.

Definition and characteristics of mental health,
- The importance of mental health care in the 21st century as an indispensable part of leading a healthy way of life. (13)

The word ‘incurable’ is still associated with cancer in Hungary. The attitude of a great part of the society towards ill people and being ill is often based on fear and ignorance, so the student will learn about: Cancer and its mysterious meanings.

Why do we speak about cancer with difficulty? Students will cover this aspect on the course considering the meaning, stigmatizing effect, fear, lack of special knowledge of cancer as a disease.

Since students have little knowledge about the atmosphere of oncology wards and the reactions of patients with cancer, they get an insight into oncopsychology. (7)

The morbidity and mortality of malignant tumours in Hungary and worldwide is discussed.

The risk factors of tumours covered by the course:
I. Carcinogens of the workplace
II. Viral carcinogens
III. Physical reasons:
- UV radiation,
- Noise and vibration,
- Vibration,
- Electromagnetic field,
- Microwave radiation,
- Ionising radiation, isotopes.
IV. Factors of the lifestyle:
- Smoking,
- Nutrition:
  - Energy intake,
  - Fats,
  - Proteins,
  - Alcohol,
  - Natural and artificial food contaminative materials
  - Food additives,
  - Synergism,
  - Physical inactivity,
V. Nosocomial medicines and radiation diseases
VI. Micro environmental tumours,
VII. Macro environmental tumours,
VIII. Chemical factors,
IX. Genetic factors,
X. Psychosomatics and tumours
  - Personality: ‘C’ type personality (carcinogenic personality)
  - The influence of emotional and mood changes on health
  - The relationship of stress and tumours
    (4, 5, 7, 11, 13, 15, 19, 21, 22)

Anticarcinogenic factors considered by the course:
Nutrition:
- Basics of comprehensive nutrition,
- Healthy ingredients, anticarcinogenic alimentation factors,
- Suggested nutrition factors,
- Nutrition factors to be avoided (1, 11, 15, 22)

Orthomolecular medicine:
- The role of antioxidants in prevention and treatment
  - Definition, physiological and pathophysiological role, characteristics and types of the free root
  - Environmental factors that cause oxidative stress. (15)

The effect of physical exercises on patients with tumours:
- General guidelines of aerobic load,
- General guidelines of resistance training (on the trunk)
- Precautions (bone metastises) (4)

Orthomolecular medicine:
- The role of antioxidants in prevention and treatment
  - Definition, physiological and pathophysiological role, characteristics and types of the free root
  - Environmental factors that cause oxidative stress. (15)

The influence of physical activity in the prevention of tumours:
- Colon cancer,
- Breast cancer,
- Prostate cancer,

In order to achieve mental health and harmony:
- Strengthening one’s coping ability,
- Ability to control stress
- A right self-image and self-picture
- Self-estimation,
- Self-development, ability to develop,
- Autonomy,
- Ability to change,
- Accepting social allowances, participation in social movements. (17, 20)

Example for relaxation and meditation techniques considered by the course:
- Autogenic training,
- Breathing therapy,
- Simonton therapy,
- Yoga, (17, 22, 23)

Complementary and alternative medicine, definitions:
Terms applied to therapies not commonly included in mainstream medicine have repeatedly changed over time, evolving from a very negative ‘quackery’ through ‘unorthodox,’ ‘unconventional,’ ‘questionable,’ ‘unproven,’ and ‘alternative.’ Current, but still evolving, terminology favours ‘complementary’ and ‘alternative’ medicine, or the acronym of both: CAM. The shifting language is exemplified by the creation of the National Institutes of Health (NIH) Office of Alternative Medicine, which was established over a decade ago and which was renamed the National Centre for Complementary and Alternative Medicine (NCCAM) in 1999. (2)

Health professionals have long promoted what we see as a necessary distinction between complementary and alternative therapies, despite
the acronymic convenience, and the viability of a newer term, integrative oncology. Complementary therapies are used as adjuncts to mainstream cancer care. They are supportive measures that control symptoms, enhance well-being, and contribute to overall patient care. Alternative therapies are typically used for use instead of mainstream treatment. This can present a problem in oncology, when delayed treatment can reduce the possibility of remission and cure. Interventions sold as literal alternatives to chemotherapy, surgery, and radiation therapies tend to be biologically active, potentially harmful, and extremely expensive and unproven. Over time, some complementary therapies are proven safe and effective. These become integrated into mainstream care, producing integrative oncology, a synthesis of the best of mainstream cancer treatment and rational, data-based, adjunctive complementary therapies. Such integration is evolving. The term applied to the program at the Memorial Sloan-Kettering Cancer Centre (Integrative Medicine Service) and similar titles applied to related programs in North America, the United Kingdom, and Europe, suggests that complementary therapies are being brought into mainstream medicine, including cancer care. Integration as well as the quality of therapies vary from country to country. CAM therapies may be categorized in many ways. NCCAM currently distinguishes five categories within CAM therapies: biologically based therapies, alternative medical systems, energy therapies, mind-body interventions, manipulative and body-based methods. Currently popular therapies within each of these categories are discussed below. Many of these approaches are unproven methods and they are promoted as alternatives to mainstream cancer treatment. Helpful complementary or adjunctive therapies are discussed in a following section. (2)

Traditional Medical Systems: These complete systems of theory and practice were developed by ancient cultures and remain essentially intact. Prominent examples include traditional Chinese medicine (TCM), India’s ayurvedic medicine, homeopathy and naturopathy medicine. (3)

After completing this course, the students will be able to:

- Describe the differences between complementary and alternative therapies.
- List common complementary and alternative therapies used by cancer patients.
- Know where to access reliable information.

Complementary ways of nutrition: The Macrobiotic Diet in Cancer,

Macrobiotics belongs to the most popular alternative or complementary comprehensive lifestyle approaches to cancer. The centrepiece of macrobiotics is a predominantly vegetarian, whole-foods diet that has gained popularity because of remarkable case reports of individuals who attributed recoveries from cancers with poor prognoses to a macrobiotic diet and the substantial evidence that the many dietary factors recommended by macrobiotics are associated with decreased cancer risk. Women consuming macrobiotic diets have modestly lower circulating oestrogen levels, suggesting a lower risk of breast cancer. This may be partly due to the high phytoestrogen content of the macrobiotic diet. As with most aspects of diet in cancer therapy, there has been much research carried out in the field, which could evaluate the effectiveness of the macrobiotic diet in alleviating suffering or prolonging survival of cancer patients. A few studies have compared the experience of cancer patients who tried macrobiotics with expected survival rates or assembled series of cases that may justify more rigorous research. On the basis of available evidence and its similarity to dietary recommendations for chronic disease prevention, the macrobiotic diet probably carries a reduced cancer risk. However, at present, there is a limited empirical scientific basis for or against recommendations for use of macrobiotics for cancer therapy. Any such recommendations are likely to reflect biases of the recommender. Because of its popularity and the compelling evidence that dietary factors are important in cancer aetiology and survival, further research to clarify whether the macrobiotic diet or similar dietary patterns are effective in cancer prevention and treatment is guaranteed. (10)

The most effective method in the healing of a tumour is to apply conventional methods combined with healthy lifestyle therapies, since lifestyle has a high percentage among the factors affecting one’s state of health.

Regional and cultural differences in cancer incidence suggest strongly that environmental factors are important determinants of carcinogenesis. The diet is the most common vehicle for carcinogen transport into the body – the other routes being inhalation and skin absorption (including radiation.) Along with other environmental differences, nutritional factors may account for as much as 30 % or more of cancer incidence. Despite the difficulties in determining the roles of individual compounds and specific conditions, research on natural products will remain a fertile field of debate, and will have potential for making a significant contribution to human health. Nutrition will also lead into unavoidable, unproductive cul-de-sacs and will remain a fertile field for unfounded claims. (23)

The Definition of Psychoneuroimmunology will be taught: The behaviour of conducted mental life and the immune system in health and illness.

PMI examines numerous questions whose clinic and epidemic aspects are significant both in healing and in prevention. E.g.: The relationship of psychosocial factors, lifestyle and immunity. (21)

Students will understand the factors which affect the treatment and outcomes of patients with cancer.

- The histological type of the tumour,
- The time and the sort of intervention/treatment and when it was recognized,
- The age and general state of the patient,
- The patient’s attitude towards his own illness,
- Other illnesses,
- Premorbid (time before illness) and present psychosomatic features.

The primary goal of the programme is to enable students to

- reduce the risk factors of malignant tumours through increasing the effectiveness of primary secondary and tertiary prevention;
- contribute to the development of a general thinking which regards health as a value;
- promote a healthy lifestyle;
- improve the quality of life of those suffering from cancer.

At the completion of the theoretical course, the students’ examination comprises of a written test and a presentation before an audience on one of the topics discussed during the course.

Conclusion

We live in historic times when considering the fight against cancer, where oncology practice that applies a multidisciplinary approach and prevention as mainstream has a significant role. The main reasons for death and common illnesses as well as the development of tumours mainly stem from the way of life people choose and the behavioural decisions they make in connection with their lifestyle. The percentage our way of life is responsible for our physical health is approximately 50 %. The deliberate and consequent change in the lifestyle also contributes to the decrease of early deaths related to cancer. Examples like in Canada, Australia or Finland (19) illustrate that the mortality rate of those suffering from cancer can be reduced significantly but there are certain requirements that need to be fulfilled: well-organised work, effective prevention and multidisciplinary co-operation of well-trained, motivated experts with a holistic approach to care and treatment.

Nowadays patients receive a huge amount of unauthentic, moreover, harmful information about the alternative ways of healing, therefore it is crucial that future experts know the safe, effective complementary therapies and when to use this to benefit patients with cancer. According to WHO, these therapies have to be gradually integrated.
into medical care, ensuring the patients’ right to choose freely. These topics were widely discussed at the conference „Controversies about Complementary and Alternative Medicine (CAM) in Oncology“ in Brussels, which was organised by EORTC (European Organisation for Research and Treatment), based in Brussels and the Milan-based ESO (The European School of Oncology) in 2006. Therefore it is essential that students as future experts are acquainted with appropriate and authorised information and professional resources in relation with multidisciplinary tumour prevention.

Considering the complexity of the topic, there is a need for special training programmes that are in accordance with social expectancy and international trends. These programmes should be organised in institutions where patients with cancer are treated so that patients, their relatives and particularly specialists working there can enrich their knowledge. The team treating oncological patients is the most suitable to convey reliable, authentic and professional information to patients and their relatives.

To conclude it has to be highlighted that success and the enhancement of effectiveness cannot be accomplished without the personal example of professionals, especially oncology nurses, in health care and in the related disciplines. Our lifestyle, the way we lead our lives should be an example to follow for our families, patients, students and the whole society.

References: