Correlates associated with the quality of life of malignant breast cancer patients and the effects of multi-disciplinary psychosocial interventions in the healing process

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DEFINITION OF THE TOPIC OF THE DOCTORAL DISSERTATION

Psycho-oncology has made a significant progress over the past three decades. It has been demonstrated that psychological factors, health behaviour and lifestyle are instrumental in the development of oncological diseases and recovery. Both clinical experience and research bear evidence to the fact that mental support and extensive psychosocial care decrease the vulnerability of the patients and help adapt to, and cope with, disease progression. Opportunities offered by psycho-oncology have not been used to the fullest extent yet. Scientific research results and professional evidence have scarcely been adopted by clinical practice. In association with the International Psychosocial Oncology Society (IPOS), WHO has made recommendations and formulated professional requirements as regards the integration of psychosocial areas into oncology in recent years: Cutting-edge oncological care can no longer dispense with the knowledge of related disciplines and integrated psychosocial care. The National Anti-Cancer Program also emphasises the importance of the accessibility of psychic support as a result of which a psycho-oncological protocol has been devised.

As a result of timely diagnosis and oncological treatments an increasing number of tumour patients are diagnosed as chronically ill, which brings quality of life to prominence. While earlier research was concerned with pre-disease life events a premorbid personality is encumbered with, the emphasis has recently been shifted to coping and psychological and behavioural aspects of coping. The patients are under a heavy emotional load with recurrent depression and anxiety resulting in deterioration of the quality of life. In coping with tumour conditions cognitive assessment procedures, viz. disease representations play a prominent role. A health-protective lifestyle, i.e. changing one’s lifestyle, decreasing risk factors, the avoidance of detrimental behaviour and effective stress management can actively contribute to recovery.

Conventional interventions accompanying tumour treatment focus primarily on changing one’s lifestyle, psychic support and care. Most of the studies published have been examining the effectiveness of a single intervention, and only recently published research materials have been assisting patients with integrated methods.

Hundreds of studies confirm the multifarious beneficial effects of exercise programs tailored to the patient’s physical condition and emotional requirements. Nutrition-related risk factors constitute as much as 30% of general cancer risks. Notwithstanding other fields of cancer prevention, nutrition has not acquired the role it deserves either in prevention or in therapy despite the recommendations of relevant domestic and international forums. Psychological and psychotherapeutic programs are widely present in the treatment of cancer patients. The programs aim to provide mental care to the patients, alleviate the burden of the disease, to promote cognitive and emotional processing and coping, as well as to improve the quality of life. According to studies published recently, the most frequently methods applied involve cognitive behaviour therapy, supportive-expressive group therapy and psycho-educational programs. Their efficiency has been demonstrated time and again with significant results achieved in emotion control and the improvement of the quality of life. Despite
promising initial results, their effects of improving survival rates have not been proved in the long run.

The opening up and development of spiritual resources, finding meaning in life and the promotion of growth have complex beneficial effects on patients. They may decrease bodily symptoms, create emotional harmony and help cope.

**OBJECTIVES:**

Our general objective is the broadening of our psycho-oncological knowledge. We wish to contribute to the high-quality integrated psychosocial care of patients by means of our research results.

Our research falls under three main sections.

The first section is devoted to exploring the psychic state of breast cancer patients and their quality of life. In our cross-section research we examined the mental and emotional condition of our patients with particular regard to the depression and anxiety syndrome characteristic to tumour disease progression as well as the predictive factors of the quality of life. Connections between finding meaning and various psychosocial factors were explored and a psychometric assessment of the Hungarian version of the EORTC QLQ C-30 quality of life questionnaire was conducted.

In the second phase of the research, on the basis of clinical experience and the latest research results we designed and conducted an integrated lifestyle and psychosocial intervention program, groundbreaking by Hungarian standards, tying in with a conventional tumour therapy in a group of patients with breast cancer. In the second part of the study the effects and efficacy of the program were examined.

The third part is a prospective study devoted to analysing the long-term effects (15 months on termination of the program) of the integrated psychosocial intervention program complementing conventional tumour therapy.

**METHODS**

**Study group**

The sample was composed of 221 female patients suffering from malignant breast tumour (C50 - non-metastatic breast carcinoma), who agreed to cooperate and who at the time were actually undergoing a treatment for active cancer. The research has been carried out in Budapest from September 2008 to June 2009, at the Department of Radiodiagnostic Clinic of the National Institute of Oncology. The registration number of the study: b859yuha – oncostudy.
Measures

Measures used for measuring the effects and efficacy of the multi-disciplinary psychosocial intervention program:

1. *The Shortened Beck Depression Inventory* – for measuring the symptoms of depression.
2. Spielberger’s State-Trait Anxiety Inventory (STAI-T) - for measuring the anxiety
3. Quality of life questionnaire EORTC QLQ C-30 and BR-23 - for measuring the quality of life.
5. Benefit Finding Scale (BF) - to measure the benefit derived from the diagnosis and treatment of breast cancer.
6. Posttraumatic Growth Inventory (PGI) - for measuring posttraumatic growth.

Statistical analysis

In statistical analysis we used SPSS 19.0, MPlus 6.01, and Microsoft Excel 2007. Descriptive analyses assessed the mean and standard deviation of scales used in the study. Chi-square tests detected differences of frequencies among groups, and ANOVA revealed any differences of means. For testing the changes in scores and for providing evidence for the effectiveness of our programme, we run a series of linear regression. We used maximum likelihood estimation robust to non-normality. Intervention is coded in group variable: intervention group, control group. At each variable, regression coefficients of group variable were estimated simultaneously. Significant regression coefficients mean that the two groups differ from each other; if a standardized regression coefficient of group variable is positive, the control group has a higher score, if it is negative, the intervention group has a higher score. Significance level: p < 0.05.

We applied confirmatory factor analysis to test the 15-dimensional and 2-dimensional (higher-order model of quality of life, the Physical/Mental Health Model) structure of the EORTC QLQ C-30 questionnaire Single-item symptom scales were treated as latent factors, and all the factors were allowed to be correlated. Due to the serious deviation from normal distribution, we used the robust weighted least square (WLSMV) estimation method. To evaluate the overall model fit, absolute fit index (chi-square value), and more liberal fit indices such as comparative fit index (CFI), Tucker-Lewis Fit Index or nonnormed fit index (TLI or NNFI), and root mean square error approximation (RMSEA) were calculated. CFI and TLI reflect the total variance accounted for by the model and indicate a fit relative to a null model. Values greater than 0.95 indicate a good fit. RMSEA reflects the variance of residuals. Values smaller than 0.05 signify a good fit.
RESULTS

1. Examination of negative affectivity

Three fourths of the group examined suffer from depressive symptoms, with every one out of 10 patients the symptoms reaching a level where clinical therapy is required. 3% of the group falls under the severely depressed category. As regards anxiety disorders, symptoms were recorded with one third of the patients, with 20% registering severe anxiety symptoms.

2. The analysis of the predictors of quality of life and benefit/meaning finding

Negative affectivity is a dominant predictor of the quality of life. Sociodemographic and medical factors such as age, qualifications, the diagnosis and the time elapsed since the operation have no bearing on the quality of life. Among the disease representations it is the consequences of the disease which have a predictive effect.

The examination of the predictors of benefit finding is a new area of research. With the breast cancer patients enrolled in the cross-section study, benefit finding did not correlate with sociodemographic and other variables under examination. Negative effectivity does not bear upon the experience of benefit finding; on the other hand, a trend-level correlation has been evinced between benefit finding, personal control and representations concerned with the consequences of the disease. However, the explanatory force of the model is inadequate.

3. The examination of the psychometric characteristics of the Hungarian language EORTC QLQ C-30 (quality of life questionnaire)

The questionnaire is one of the most frequently used measuring device translated into numerous languages and with its scale validated in many countries. The reliability of the original 15 dimensional health model and improved 2 dimensional model (physical health factor and mental health factor) is adequate; the internal consistency of the scales is decidedly high and the fit indices are acceptable.

4. The assessment of the efficacy of the multidisciplinary psychosocial interventional program

The effects of the program were explored in six areas: mood indicators, quality of life, disease representations, meaning/benefit finding, post-traumatic growth and health behaviour. In all areas examined a statistically significant positive effect of the intervention program was demonstrated.

4/1 Remarkable improvement was achieved as regards emotion control with a significant drop in depression and anxiety among patients participating in the study.
4/2 Significant improvement came about in a number of areas of quality of life. The patients examined find their overall quality of life markedly better and the symptoms associated with the disease (exhaustion, pain, diarrhea, vomiting, insomnia, lack of appetite, lightheadedness, chest distention, edema, impaired motoric spectrum, etc.) less burdensome, and experience an evident improvement in their symptoms. Bodily self-esteem and judgment of the body image has improved. Future perspectives have changed for the better – the patients envisage a better, fuller and securer future.

4/3 As for disease representation, three areas have seen significant improvement: cognitions regarding the course and curability of the disease and constructs of personal control.

4/4 The significant effect of the program was also manifest in the benefit finding questionnaire. In processing the trauma the patients greatly capitalized on coping with the disease.

4/5 In the post traumatic questionnaire a significant improvement was measured on the subscales “Respect for life”, “New opportunities”, “Spiritual change”, and “Relating to others”, and a trend-level change was observed on the “Personal strength” subscale.

4/6 Patients enrolled in the experimental group demonstrated a distinct adherence to the instructions with significant improvement made in health behaviour. Exercise, relaxation, and a health-conscious diet became regular, exercises involving imagination and positive suggestion became part of their lifestyle.

5. The longitudinal efficacy study of the psychosocial intervention program (15 months following termination)

The effects of the intervention proved to be long lasting. In all areas examined the beneficial changes achieved by the end of the program persisted, if moderately diminished. Post-traumatic growth was significant even in the long-run (including exploring new possibilities, connection with the transcendent dimension and relation to others) and so were constructs of personal control so far as the perception of the disease is concerned.

CONCLUSIONS AND NEW FINDINGS

1. the prevalence of clinical and subclinical level depression and anxiety was assessed
2. the most important predictors of life quality were identified including negative affectivity and disease representations
3. the reliability of the Hungarian version of the EORTC QLQ C-30 quality of life questionnaire and the improved two-dimensional model’s fit indices were determined.
4. an integrated psychosocial intervention program was developed, groundbreaking by Hungarian standards
5. An effect study of the program was performed – in all areas examined (including emotion control, quality of life, disease representations, benefit finding, posttraumatic growth and health behaviour) the intervention proved efficient.

6. A prospective examination of the long-term effects (15 months following termination of the program) was conducted – the results indicate that the beneficial changes persisted in the long run.

In our analysis we identified the prominent role of negative affectivity in the tumour patients' quality of life. The timely diagnosis of a destitute and depressed emotional state and the alleviation of emotional distress are of key importance not only in relieving the burden of suffering itself, but also in influencing the symptoms and the patients’ quality of life. The treatment is also prominently important in coping with unfavourable endocrine and immune effects (the dysregulation of the HHA axis, decreased immune modulation, impaired apoptosis), which indirectly contributes to the containment of the progression of the tumour disease.

Further to emotion control it is also necessary to transform beliefs and cognitive schemes relating to the disease. The modification of cognitive schemes and reinterpretation of beliefs in relation to the disease and future may bring adaptive behaviour forms to the forefront and promote coping.

Based on the results of the examination the view that patients can actively contribute to the improvement of their health condition appears to be well-founded. All this further corroborates the outdatedness of the biomedical treatment model. Change of lifestyle is all-important in which professional guidance conforming to the patients’ impaired emotional and bodily condition is required. We wish to stress the importance of the accessibility of psychosocial assistance and individual or group psychotherapy in all phases of disease progression. The introduction of a bio-psycho-social and spiritual treatment model is arguably justified: complementing psychic and social support the spiritual dimension may mobilise resources that can exert a beneficial effect in numerous areas.

Our study and related similar research also have an important message for health policy: psychosocial interventions are largely cost-effective – a marked improvement may be achieved in mental health and quality of life in return for a small investment. Today, psycho-oncological professional services are underrepresented in oncological treatment with most patients barred from access to such treatment. Cutting edge oncology, on the other hand, can no longer dispense with the knowledge of social sciences and integrated psychosocial care.

THE AUTHOR'S PUBLICATIONS AND LECTURES IN THE TOPIC OF THE TREATISE

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