QUALITY OF LIFE OF PATIENTS WITH CANCER

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Summary

Quality of life evaluation of cancer patients is a challenging task due to the great variety of possibilities. The paper first gives an overview of the methods of quality of life assessment. Main target areas and conditions of the applicability are reviewed, including the use of proxy raters. For rehabilitation purposes the application of quality of life profiles are recommended. According to most researchers generic measures should complete the use of condition diagnosis or symptom) specific instruments. The second part of the paper is based on a literature review. Review of the effects of therapeutic interventions at different cancer pathologies on the quality of life is mainly based on randomized controlled studies. Very few studies reported on significant improvement. Several systematic reviews evaluate methodological questions concerning quality of life assessment/measurement in cancer patients. The multitude of available measures may make any comparisons difficult. Well established, frequently used direct measures are preferred. Finally a few papers report on the effects of quality of life assessment on the communication between clients and professionals, and consequently on possible beneficial effect on quality of life of the assessed person.

BACKGROUND

Quality of life is a relatively new and a rather challenging broad ranging concept with a multitude of different definitions. The definitions published in literature differ both conceptually and methodologically. In the present paper we shall use the definition of WHO that was developed by the multi-national and multidisciplinary WHOQOL-Group. According to this "*quality of life* is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationships to salient features of their environment" (1). Thus, quality of life is different from health status, even if health is interpreted by WHO's broad health concept. Health status assessment is restricted to assessment of dimensions directly influenced by the health care, such as physical health, mental health, social participation adequacy of interpersonal relations), role-functions e.g. job, schooling), and perceived general health (2).

If quality of life is a challenging concept, evaluation of cancer patient's quality of life is even more challenging. The diagnosis of cancer is bound to a pathological process. This pathology has great variability, it may affect all organs, and may create metastases in a variety of other organs. The pathology may affect people in different ages, and age has specific influence on the quality of life (3). The cancer may be in different stages, end stage malignant disease is characterised by decreasing quality of life. Additionally all forms of therapy chemo- and radiotherapy, surgery) and their combination may seriously affect the person's quality of life.

This paper aims at discussing some of the difficulties and problem areas of addressing and evaluating cancer patient's quality of life. It presents the personal view of the author based on a literature review.

METHODS OF QUALITY OF LIFE EVALUATION

As mentioned briefly there are numerous different definitions of quality of life. The measurement approaches are also multiple. Table 1 provides an overview of different approaches.

Table 1: *Methods of quality of life assessment.*

questionnaires
- profiles
  - generic
  - specific
  - indexes

visual analogue scale
- administrated in itself
- administrated with questionnaires

observation
- without personal participation

with personal participation

Questionnaires instruments, measures

To date the most frequently used way of quality of life measurement is the use of questionnaires. Basically two types are available, profiles and indexes. *Profiles* usually have relatively large number of items connected to many different determinants of quality of life. Well developed profiles may help therefore understand a single person's quality of life influencing factors in detail, thus those have more importance in clinical practice. Also specific groups may be assessed and population related consequences may be drawn. Yet, this has to be done with great care due to the individual nature of quality of life and the great variety of e.g. cancer pathologies.

Quality of life *indexes* on the other hand are usually composed of a few items of which one common index number may be calculated. These are more frequently used in healthcare policy-making although indexes have been used also in clinical practice including cancer care. One of those, the Spitzer-index composed of five items each with three point answer scales has been used also in recently published papers (4-6).

Getting back to profiles these may be generic or specific. *Generic quality of life profiles* are measurement tools applicable at the population at large or at least at the majority of it, excluding e.g. children, or persons with major cognitive or communication disturbances. The profiles are developed according to the interpretation of the quality of life concept of the developers. For this reason their content may be largely different. Some are rather health status measures, yet interpreted widely as quality of life assessment instruments. Another problem may arise from the method of development. Measures e.g. developed in one single culture may have bias if utilized in other cultures.

Specific quality of life instruments target different population groups. The specificity of these groups may be based on their social status minorities, refugees, etc) or on their health condition. Under health condition we may further differentiate. Some instruments target specific diagnoses, e.g. HIV patients, cancer patients, and may go into further detail based on the affected organs or body parts brain tumour, breast cancer, head and neck cancer, etc). Other instruments have been developed on symptom basis pain, nausea, fatigue). The aim of such developments is usually the creation of an instrument specific enough to demonstrate the effects of some therapeutic interventions. Often drug manufacturing firms attempt to demonstrate the superiority of their products compared to other medicaments. However, this approach may also have a challenge, namely the broad range of quality of life affecting factors may be neglected thus only a few aspects of quality of life of the evaluated person may be learned at the single use of such instruments.

From the ICF point of view quality of life – if its definition by WHO accepted – is largely but not solely) related to the participation dimension of the person's life. Some questionnaires contain almost only items related to the existence of specific symptoms. These fit into the body function, or body structures dimension. In some other instruments the majority of items may relate to activities. It can be argued that health care workers are more familiar with these dimensions they may feel more comfortable and safe if their evaluation process is restricted to these areas. The aim of rehabilitation, however, is to improve *the person's quality of life as they experience it*. Patient's functional performance and quality of life do not correlate necessarily moreover functional gain during rehabilitation does not necessarily improve patient's quality of life (7). As people's quality of life is largely influenced by factors of the participation dimension, not to forget the environmental factors, we advocate for the combined use of generic and specific measures even at studying specific therapeutic intervention of cancer patients. The use of combined measures is supported in several recent publications as well (8-9).

Visual analogue scale

In the early years of quality of life assessments in health care visual analogue scales have been widely used. As the instrument development has been improved and the instruments became scientifically well founded the use of visual analogue scales have been decreased but not disappeared. Visual analogue scale may be used for the assessment of the overall quality of life. Important is the well conceptualized and well and widely understandable definition of the two endpoints of the scale. If these requirements are satisfied reliable answers may be expected from the respondents. As mentioned above Spitzer's visual analogue scale, with cancer specific end-point definitions is still in use over two decades following its introduction (6).

Another use is bound to questionnaires, usually indexes. In such cases each item of the instrument may be answered on the visual analogues scale bound to that specific item.

Observation

If cognitive and/or communication problems prevent the use of either questionnaires or visual analogue scales observation of the person and his/her behaviour may be useful in studying their quality of life. One may observe the behaviour, the communication, and the interpersonal interactions of the person assessed. Observations may be described as narratives or perhaps more practically previously defined actions or features may be counted and documented.

Observations may be performed with or without personal presence of the observer from behind a mirror-window or by videotaping in the later case). Both have advantages and draw-backs. If the observer is present everything may be well seen but his/her presence may disturb the real life situations. On the other hand if the observer is not present some actions, signs or other features may remain hidden.

Proxy

In case of doubt of the feasibility of questionnaire's use by the patients proxy information may be gathered. In cancer care this is often the situation at the end-stage of the disease course. Only persons who know the patient substantially well may act as proxies. These are usually partners, family members and often health or social care staff members. The same or very similar instruments are used in such cases as for direct patient interviews. However, a number of problems arise with proxies. How reliable and valid is their assessment? Is there an over or under estimation of problems of the patient in different life areas? These questions have no definitive answers yet, further studies are needed. Patient-proxy agreement was higher in the case of patient's significant others e.g. partners as in the case of professional proxies. Proxy raters tended to report more quality of life problems compared to patients themselves in a comparative study (10). On the other hand some evidence support the view that patient's and family carer's quality of life in severe malignant disease correlate (11).

LITERATURE SURVEY

Publications on quality of life of cancer patients and the effect of their treatment on quality of life are numerous. Many papers, however, report on symptoms, co-morbidities or on level of functioning, and interpret these and their changes as quality of life and its improvement or decrease. This approach is not fitting into the WHO's quality of life concept and definition, the starting point of our present paper. Direct assessment of quality of life is preferred.

Experiencing the numerous uncertainties concerning quality of life assessment of cancer patients a literature survey was performed with restricted titles from the Pub Med database. We used the combination of the terms cancer, quality of life, and assessment or measurement. As for study methodology randomized controlled trials, well designed controlled clinical trials and review papers, for language English or German were preferred. The search was limited to publications of the years 2004-2007. However, some references of these papers were also reviewed. Altogether 61 papers have been reviewed of these 27 have been selected for drawing conclusions due to methodological quality.

Based on their contents and conclusions the studied papers could be classified into the following three categories:

- randomized controlled studies and some well designed controlled clinical studies) on the effects of therapeutic interventions at different cancer pathologies and different stages, including effects on quality of life utilizing well established valid, reliable) quality of life assessment instruments,
- reviews, meta-analyses evaluating methodological questions concerning quality of life assessment/measurement in cancer patients,
- papers on the effects of quality of life assessment on the communication and on the quality of life of the assessed person.

A concise discussion of these study categories is given in the next part of the paper.

Effects of therapeutic interventions on the patients' quality of life

Altogether 16 papers met the inclusion criteria into this category of studies (9, 12-26). Methodologically the majority reported on randomized controlled trials, and two clinical trials were also added. As for the diagnosis the papers represented rather heterogeneous cancer groups including oral, gastrointestinal, haematological, breast, gynaecological, prostate, head and neck cancers as well as brain metastases and end stage cancer. The majority of interventions were drug treatments often comparing two different medicines or combinations but surgery, radio-, nutrition-, and psychotherapy and palliative care have also been reported in some studies.

All papers reported the use of established direct measures of quality of life. These had a large variety. Out of the generic instruments the Medical Outcome Studies Short Form SF-36) was most frequently utilized but some others like EuroQol EQ-5D) and WHOQOL-BREF have also been used.

Of the cancer specific instruments the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire EORTC-QLQ-C30) seems to be the most popular followed by the Functional Assessment of Cancer Treatment – General Version FACT-G) developed in the USA. Both of these have organ specific modules e.g. EORTC-QLQ-PR25 for prostate, EORTC-QLQ-LC13 for lung, FACT-C for colorectal cancer. Additionally also symptom specific FACT modules have been used e.g. FACT-F for fatigue, FACT-An for anaemia. In addition further site specific quality of life measures and a variety of symptom specific instruments have been utilised. Worth to mention are six different pain scales, as well as measures of distress, depression, anxiety, memory, emotional well being, sexuality, and social well being. We may conclude that this richness of instruments utilised creates difficulties in comparing studies.

Regarding the outcomes most of the papers draw careful conclusions. In the majority of the studies no or non significant improvements of quality of life have been found following the intervention, or there was no or non significant difference between the outcomes of the study arms comparing alternative interventions. In one study the improvement was temporary. On the other hand out of three studies with only short-term follow-up, two reported on significant quality of life improvement. The authors point out the necessity of longer follow-up.

Methodological questions concerning quality of life assessment in cancer patients

Discussion of this category of papers is based mainly on literature reviews (8-9, 27-33) and one randomised controlled trial (34). This last paper studied whether presentation order of the instruments influences the responses. Two of the following three measures, EORTC-QLQ-C30, FACT-G and the Functional Living Index-Cancer have been used in randomly selected order. No effect of the presentation order was found.

From the performed survey we may conclude that in-spite of the constantly increasing number of studies on the quality of life of cancer patients there is a considerable variety of interpretations of the quality of life concept. For this reason it seems to be appropriate that authors state their understanding and use of the most important terms in all publications.

The most uniform conclusion of the review papers is the very wide variety of the instruments utilized in surveyed studies. One of those could not find the same instrument in more than 10% of the reviewed papers (32). Our experience is somewhat more favourable. The most frequently used instruments have been mentioned earlier. The measurement tools vary a great deal from methodological points. Not all are validated, or the validation is based on small study samples.

Quality of life assessment in paediatric age provides another methodological problem. Usually children at the age of 7 or 8 years are able to give reliable responses to questionnaires. Sometimes they may provide information that is not available from e.g. parents. However, the use of additional view-points of parents or health-care professionals can provide valid and important complementary information (33). Such view points should always be evaluated with great care.

Most papers report on increasing frequency of quality of life assessment as part of the outcome assessment. The previous chapter summarized those seeking information on the effect of therapeutic interventions. The other area with increasing interest is palliative care in end stage cancer (28-29). Most important goal of palliative care is improving the quality of life through control of serious symptoms, and attention to the patients psychological, social and spiritual needs. Thus in care practice quality of life assessment is one or the most important outcome measure in this stage of disease course. Patient satisfaction and preference studies are added as well. Often the use of proxy opinions seems to be justified because of cognitive problems in end stage cancer. The decision power usually lies with the professionals. For this reason also family members or other important persons in the patient's life should be requested to act as proxy raters (29).

According to the reviews most studies use more than one quality of life measure, including both general and specific instruments and a number of symptom specific measures e.g. for pain, depression or emotional well being. Some authors argue for the joint implementation of generic and specific quality of life assessment tools as a required standard for cancer outcomes studies (8-9). Additionally to the listed assessments economic evaluation, and cost-effectiveness studies may be performed (8, 32-33).

The papers list a large number of quality of life influencing factors, like age, gender, emotional status, personality, behaviour, social support, income, functional performance, way of consultation and information provision, and types of therapeutic interventions (31, 34). Many of these are the basis of items in the different measurement tools. The effects of therapeutic interventions have been summarized in the previous chapter. In rehabilitation the most important are those factors that may be changed, or influenced by the rehabilitation process.

Finally based on the survey we may argue that instead of developing new instruments the use of established measures, validation and reliability studies on larger samples and prospective longitudinal studies would considerably help further development.

Quality of life assessment and communication

Three papers two reviews and a randomised controlled trial) also deal with the importance of quality of life assessment as communication tool in the therapeutic process (27, 31, 35). On one side the application of quality of life profiles may help patients express concerns otherwise reluctant to mention. This knowledge may help members of the health-care team in providing more adequate services. More importantly this knowledge may also facilitate the discussion with the patients, by the communication their better involvement into the planning process of therapy and rehabilitation, at the same time decreasing their anxiety, depression and psychological distress. The combination of these effects may improve the outcomes. Our own experience also suggests that involvement of patients into positive planning of the future may considerably help improving their outcomes.

Finally it is worth to mention that Velikova et al in a longitudinal randomized controlled trial compared the use of a cancer specific quality of life measure EORTC-QLQ-C30) and feed-back of results to the physicians formerly trained for the use of this information at their encounters with their patients, the simple use of the measure but no feed-back attention group), and finally no quality of life assessment in the third control) group (35). Patients in the intervention and in the attention group had significantly higher quality of life p=.006 and p=.01 respectively) than the control group. Also a positive effect on emotional well-being was associated with feed back of quality of life data without prolonging the consultations. Instrument completion alone attention group) did not have similar effect. These observations are also in concordance with ours. In a cross sectional study at the National Institute for Medical Rehabilitation Budapest, performing quality of life assessments were associated with higher patient satisfaction, although not of cancer patients.

CONCLUSIONS

Based on the review of papers and own experience the following conclusions can be drawn:

- The richness of quality of life assessment instruments used at cancer patients creates difficulties in comparing studies and outcomes.
- Direct measures of quality of life are preferred compared to indirect assessment.
- Non significant quality of life improvements have been observed following interventions in most studies. The nature of malignant diseases and their aggressive therapy may explain this observation.
- Because of the above listed conclusion prospective longitudinal quality of life studies are needed.
- Beside cancer specific quality of life measures generic ones should be used as well.
- If due to cognitive or communication problems the information of proxies is needed the proxies should be selected and the outcomes interpreted with great care.
- Last but not least, quality of life assessment may facilitate the communication between patients and professionals and through this effect may also improve the outcomes and the patients' quality of life.

References:

1. World Health Organization. WHOQOL: Measuring quality of life. Geneva: WHO, 1997.

2. Hopkins A. Measuring the quality of medical care. London: Royal College of Physicians, 1990.

3. Tróznai T, Kullmann L. Assessment of the quality of life of elderly people by the WHOQOL-OLD instrument: a validation study. Top Geriatr Rehabil, [accepted for publication].

4. Mercadante S, Arcuri E, Tirelli W, Villari P, Casuccio A. Amitriptylin in neuropathic cancer pain in patients on morphine therapy: a randomized, placebo-controlled, double-blind crossover study. Tumori 2002; 88: 239-242.

5. Rummans TA, Clark MM, Sloan JA, Frost MH, Bostwick JM, Atherton PJ, et al. Impacting quality of life for patients with advanced cancer with a structured multidisciplinary intervention: a randomized controlled trial. J Clin Oncol 2006; 24: 635-642.

6. Spitzer WO, Dobson AJ, Hall J, Chesterman E, Levi J, Shepherd R, et al. Measuring the quality of life of cancer patients: a concise QL index for use by physicians. J Chron Dis 1981; 34: 585-597.

7. Huang ME, Wartella JE, Kreutzer JS. Functional outcomes and quality of life in patients with brain tumors: a preliminary report. Arch Phys Med Rehabil 2001; 82: 1540-1546.

8. McNaughton-Collins M, Walker-Corkery E, Barry MJ. Health-related quality of life, satisfaction, and economic outcome measures in studies of prostate cancer screening and treatment, 1990-2000. J Natl Cancer Inst Monogr 2004; 33: 78-101.

9. Violi V, Detullio P, Zinicola R, Costi R, Iusco D, Sarli L, et al. Quality of life assessment in geriatric surgery. Acta Biomed 2005; 76: Suppl. 1: 59-63.

10. Sneeuw KCA, Sprangers MAG, Aaronson NK. The role of health care providers and significant others in evaluating the quality of life of patients with chronic disease. J Clin Epidemiol 2002; 55: 1130-1143.

11. Janda M, Steginga S, Langbecker D, Dunn J, Walker D, Eakin E. Quality of life among patients with a brain tumor and their carers. J Psychosom Res 2007; 63(6): 617-623.

12. Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomised controlled trial. Brit J Cancer 2006; 95: 667-673.

13. Berry DL, Moinpour CM, Jiang CS, Ankerst DP, Petrylak DP, Vinson LV, et al. Quality of life and pain in advanced prostate cancer: results of a Southwest Oncology Group randomized trial comparing docetaxel and estramustine to mitoxantrone and prednisone. J Clin Oncol 2006; 24: 2828-2835.

14. Bruce J, Krukowski ZH. Quality of life and chronic pain four years after gastrointestinal surgery. Dis Colon Rectum 2006; 49: 1362-1370.

15. Kim JH, Park CY, Lee Sj. Effects on sun ginseng on quality of life in cancer patients: a double-blind, placebo-controlled pilot trial. J Clin Pharm Ther 2006; 31: 331-334.

16. Kopec JA, Yothers G, Ganz PA, Land SR, Cecchini RS, Wieand HS, et al. Quality of life in operable colon cancer patients receiving oral compared with intravenous chemotherapy: results from National Surgical Adjuvant Breast and Bowel Project Trial C-06. J Clin Oncol 2007; 25(4): 424-430. Erratum in: J Clin Oncol 2007; 25(34): 5540-5541.

17. Land SR, Wiskerham DL, Costantino JP, Ritter MW, Vogel VG, Lee M, et al. Patient reported symptoms and quality of life during treatment with tamoxifen or raloxifene for breast cancer prevention: the NSABP Study of Tamoxifen and Raloxifene (STAR) P-2 trial. JAMA 2006; 295(23): 2742-2751. Erratum in: JAMA 2007; 298(9): 973; Comment in: JAMA 2006; 295(23): 2784-2786.

18. Long HJ, Monk BJ, Huang HQ, Grendys EC, McMeekin DS, Sorosky J, et al. Clinical results and quality of life analysis for the MVAC combination (methotrexate, vinblastine, doxorubicin, and cisplatin) in carcinoma of the uterine cervix: a Gynecologic Oncology Group study. Gynecol Oncol 2006; 100: 537-543.

19. McQuellon RP, Thaler HT, Cella D, Moore D. Quality of life (QOL) outcomes from a randomized trial of cisplatin versus cisplatin plus paclitaxel in advanced cervical cancer: a Gynecologic Oncology Group study. Gynecol Oncol 2006; 101: 296-304.

20. Morishima Y, Ogura M, Yoneda S, Sakai H, Tobinai K, Nishiwaki Y, et al. Once-weekly epoetin-beta improves hemoglobin levels in cancer patients with chemotherapy-induced anemia: a randomized, double-blind, dose-finding study. Japan J Clin Oncol 2006; 36: 655-661.

21. Penedo FJ, Molton I, Dahn JR, Shen BJ, Kinsinger D, Traeger L, et al. A randomized clinical trial of group-based cognitive-behavioral stress management in localized prostate cancer: development of stress management skills improves quality of life and benefit finding. Ann Behav Med 2006; 31: 261-270.

22. Semiglazov VF, Stepula VV, Dudov A, Schnitker J, Meng U. Quality of life is improved in breast cancer patients by Standardised Mistletoe Extract PS76A2 during chemotherapy and follow-up: a randomised, placebo-controlled, double-blind, multicentre clinical trial. Anticancer Res 2006; 26(2B): 1619-1529.

23. Shang E, Weiss C, Post S, Kaehler G. The influence of early supplementation of parenteral nutrition on quality of life and body composition in patients with advanced cancer. J Parenteral Enteral Nutrition 2006; 30: 222-230.

24. Straus DJ, Testa MA, Sarokhan BJ, Czuczman MS, Tulpule A, Turner RR, et al. Quality of life and health benefits of early treatment of mild anemia: a randomized trial of epoetin alfa in patients receiving chemotherapy for hematologic malignancies. Cancer 2006; 107: 1909-1917.

25. Wattchow DA, Weller DP, Esterman A, Pilotto LS, McGorm K, Hammett Z, et al. General practice vs surgical-based follow-up for patients with colon cancer: randomised controlled trial. Brit J Cancer 2006; 94: 1116-1121.

26. Wittekind C, Liu WC, Preuss SF, Guntinas-Lichius O. Botulinum toxin A for neuropathic pain after neck dissection: a dose finding study. Laryngoscope 2006; 116: 1168-1171.

27. Chandu A, Smith ACH, Rogers SN. Health-related quality of life in oral cancer: a review. J Oral Maxillofac Surg 2006; 64: 495-502.

28. Earle CC. Outcomes research in lung cancer. J Natl Cancer Inst Monogr 2004; 33: 55-77.

29. Jocham HR, Dassen T, Widdershoven G, Halfens R. Quality of life in palliative care cancer patients: a literature review. J Clin Nursing 2006; 15: 1188-1195.

30. Jones GL, Ledger W, Bonnett TJ, Radley S, Parkinson N, Kennedy SH. The impact of treatment for gynecological cancer on health-related quality of life (HRQoL): a systematic review. Am J Obstet Gynecol 2006; 194: 26-42.

31. Llewellyn CD, McGurk M, Weinman J. Are psycho-social and behavioural factors related to health related-quality of life in patients with head and neck cancer? A systematic review. Oral Oncol 2005; 41: 440-454.

32. Mandelblatt J, Armetta C, Yabroff KR, Liang W, Lawrence W. Descriptive review of the literature on breast cancer outcomes: 1990 through 2000. J Natl Cancer Inst Monogr 2004; 33: 8-44.

33. Pickard AS, Topfer LA, Feeny DH. A structured review of studies on health-related quality of life and economic evaluation in pediatric acute lymphoblastic leukemia. J Natl Cancer Inst Monogr 2004; 33: 102-125. Comment in: J Natl Cancer Inst 2005; 97(23): 1786; author replay: 1786-1787.

34. Cheung YB, Lim C, Goh C, Thumboo J, Wee J. Order effects: a randomised study of three major cancer-specific quality of life instruments. Health Qual Life Outcomes 2005; 3: 37.

35. Velikova G, Booth L, Smith A, Brown PM, Lynch P, Brown JM, et al. Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. J Clin Oncol 2004; 22: 714-724.

36. Cullen J, Schwartz MD, Lawerence W, Selby JV, Mandelblatt JS. Short term impact of cancer prevention and screening activities on quality of life. J Clin Oncol 2004; 22: 943-952.

Appendix 1. Topics not items) of the two most frequently used cancer specific quality of life assessment instruments. Source: Fayers PM, Machin D. Quality of life assessment, analysis and interpretation. Chichester, Wiley & Sons, 2000. pp. 358-363.)

European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire EORTC QLQ-C30) For permission to use contact: Quality of Life Unit, EORTC Data Centre, Avenue E. Mounier 83-B11, 1200 Brussels, Belgium.)

strenuous activities
walking long distance
short walk outside
confined to bed or chair
independence in ADL
work and other daily activities
hobbies, leisure time activities
shortness of breath
pain
need to rest
sleeping
weakness
appetite
nausea
vomiting
constipation
diarrhea
tiredness
pain interfere with ADL
concentration at e.g. reading
feeling tense
worry
feeling irritated
depression
memory
condition/treatment interfere with family life
condition/treatment interfere with social activities
condition/treatment causing financial difficulties
rating overall health
rating overall quality of life

Functional Assessment of Cancer Treatment – General Version FACT-G) For permission to use contact: Dr David F. Cella, Center on Outcomes, Research & Education, Evanston Northwestern Healthcare, 1000 Central Street, Suite 101. Evanston, IL 60201, USA)

Physical well-being
lack of energy
nausea
trouble in meeting needs of family
pain
bothering side effects
feeling ill
forced to spend time in bed

Social/family well being
feeling close to friends
emotional support from family
support from friends
family accepting illness
satisfaction with communication in family
feeling close to partner
satisfaction with sex life

Emotional well-being
feeling sad
coping with illness
losing hope in fighting against illness
feeling nervous
worry about dying
worry of getting worse

Functional well-being
ability to work
work fulfilling
enjoying life
acceptance of own illness
sleeping
enjoying things done for fun
overall quality of life