one would expect to lead to pessimism or despair. These findings advance decision science by incorporating current theories of positive emotion which highlights the importance of positive mood for broadening thought and building future resources when facing the long term sequelae of recurrent disease.

Conclusions: Clinically, it is important to understand the processes which lead women to select unnecessarily aggressive therapies or decline therapy altogether from a sense of despair rather than reasoned deliberation. The importance of understanding women's decision behavior at various points in the treatment continuum lies in targeting problematic areas where structured decision interventions may improve decision quality and subsequent psychological outcomes in this chronic and life-threatening disease.

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Choice of surgical treatment in breast cancer is not influenced by personality and quality of life

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Background: When confronted with the diagnosis early stage breast cancer women are usually allowed to choose their surgical treatment. The options are breast conserving therapy followed by radiotherapy (BCT) or mastectomy (MTC). Personal characteristics that may influence this decision were assessed in this study.

Methods: Women referred to the outdoor clinic with breast disease were asked to participate in a prospective study concerning quality of life. Before breast cancer was diagnosed the women completed questionnaires concerning quality of life (WHOQOL-100), personality (NEO-FI), depressive symptoms (CES-D), fatigue (FAS), and anxiety (STAI). Regression analyses were performed to see whether any of the clinical, psychological or personality factors or the clinical parameters were of significance in the decisional process.

Results: Between September 2002 and January 2007 609 women were included in the study of whom 225 were diagnosed with early stage breast cancer. Of these women 133 choose BCT and 90 women opted for MTC as surgical treatment. Two women requested to be treated with hormonal therapy only.

There were no differences between the two treatment groups concerning demographic, personality, and psychological characteristics. The women who opted for MTC had larger tumors on radiology ($p < 0.001$), and women who choose for BCT had tumors that were found more often with a breast cancer screening program.

Logistic regression analyses showed that only participation in a breast screening program and a high score on the domain social relationships of the WHOQOL-100 had a significant influence on the treatment choice and predisposed for BCT.

Conclusions: The choice between BCT and MTC is based on personal preference of the woman. So far this choice cannot be explained by personality or pre-existent overall QoL. This implies that differences in QoL found after breast cancer treatment are caused by the chosen type of surgery.

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Evaluation of a breast reconstruction service: multi-disciplinary care and satisfaction with information leads to improved outcomes

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Background: At the Queen Elizabeth Hospital (TQEH) in Adelaide, South Australia, a 350 bed publicly funded hospital situated in the culturally diverse western suburbs, a collaborative service is provided for women considering breast reconstruction.

Comprised of the Breast surgical team, in conjunction with the Plastics and Reconstructive surgical team, a multidisciplinary approach to care of these women and their families has developed. Until now this service had not been evaluated from a client perspective.

Methods: A self-report questionnaire was developed with specific questions asked about the woman's pre and post-operative experience. All women who had undergone a breast reconstruction in the past ten years were eligible.

Information was collected on:

- The surgical consultations they received pre operatively
- Their hospital experience after their surgery
- Their psychological outcomes once treatment was completed

Results: 112 surveys were sent. 50 surveys were completed and returned. Results were entered into a database (Predictive Analytics Software) and analysed with Fisher's exact test.

Key findings were:

- Main source of initial information about reconstruction was breast surgeon and breast care nurse
- Patients seen in TQEH outpatients clinic were more likely to see a breast care nurse than those seen privately ($p = 0.05$)
- All those who were happy with the result (72%, $n = 34$) felt they had received adequate information after the first plastic surgeon consultation, only 63% (5 out of 8) patients who were not happy felt they were satisfied with the information provided ($p = 0.012$)
- Those that were satisfied with the information received and consequently understood more about the procedure were glad they had reconstruction ($p = 0.018$; 0.015) and were more confident post operatively ($p = 0.008$, 0.006)
- Women were happy to recommend the surgery if they had received adequate information pre operatively ($p = 0.028$)
- 86% of those who saw a plastics nurse pre-operatively were more confident after the surgery, but only 54% of those who didn't see a plastics nurse were more confident after surgery ($p = 0.05$)

Conclusions:

- Satisfaction of information and improved understanding were linked to improved psychological outcomes post operatively in this group of women.
- Both medical and nursing involvement with these women was shown to be important.

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Collateral damage – the full impact of breast cancer on the family unit

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Aim: To objectively assess the psycho-social impact surgery and other adjuvant treatment modalities for breast cancer has on patients' spouses/ partners.

Method: The Nottingham Health Profile index of Distress (NHPD) is a generic undimensional 24-item measure of illness-related distress. It consists of 24 dichotomous (Yes/No) items that yield a score ranging from 0 to 24. Higher scores indicate more distress. Participants were asked to fill in the NHPD while attending with their partners to follow up clinics.

Results: 61 participants took part in the study (Mean Age: 61.4). All were males. Most were retired ($n = 32$). Most of their partners have had their surgery within the last five years ($n = 42$). The median NHPD score for the sample was 8. Higher scores were noted in the elderly (p 0.03). Chemotherapy was described as the most disturbing experience by the majority ($n = 36$), yet receiving chemotherapy was not associated with higher scores (p 0.043) unlike Radiotherapy which was (p 0.049). Lower scores were noted in those whose partners have had their diagnosis within the last five years ($p < 0.001$).

Discussion: Duration since diagnosis has no impact on the NHPD score; however there seems to be a recent improvement in communication, leading to a better understanding of the disease from both patients and their partners. The elderly seem to be distressed the most and adjuvant therapy was described as the most disturbing experience. Breast cancer impacts on both the patients and their families alike and patients' partners should also be considered during consultations and offered support if needed.

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Personality and not type of surgery affects body image in women with breast problems

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Background: The objective of this prospective study was to examine the changes in body image over time in women with breast problems and to determine which factors (sociodemographic, clinical, personality) predict body image scores at different time points over a one-year period.

Materials and Methods: Women with breast problems ($n = 384$) completed prior to diagnosis (Time-1) and one (Time-2), three (Time-3), six (Time-4), and 12 months (Time-5) after primary surgery a measure of body image (WHOQOL-100-facet Body Image). Before diagnosis was known, personality was assessed (NEO-FFI). Clinical data were derived from medical files.

Results: Factors predicting higher scores on body image at follow-up are age ($p < 0.05$), not receiving chemotherapy ($p < 0.05$, except Time-2), lower scores on neuroticism ($p < 0.01$), higher scores on agreeableness ($p < 0.01$). Body image changed significantly over time [$F(4,241) = 3.1$; $p = 0.015$]. An interaction effect was found between time and surgical treatment, indicating that women with mastectomy (MTC) scored differently on body image than women with benign breast problems or breast-conserving therapy (BCT) [$F(8,482) = 1.95$; $p = 0.51$]. From Time-1 to Time-2, women with MTC reported a significant deterioration in their body image ($p = 0.035$). Overall, women with benign breast problems and women with BCT and MTC did not score differently on body image, except at Time-2 ($p < 0.036$).

Conclusions: One year after surgical treatment little changes were found in body image scores in benign patients as well as breast cancer patients who underwent either BCT or MRM. A decrease in body image was only seen in MTC patients, however, time seemed to be an important factor in renewing the satisfaction with appearance. Knowledge about the risk factors will help professionals to identify women who are at risk of adjustment problems and consequently provide adequate support.

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Psychological distress in breast cancer patients: depression, anxiety and post-traumatic stress disorder in different phases of the disease

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Background: Breast cancer patients are at risk for developing psychological distress and psychiatric disorders such as major depression (MD), anxiety disorders (AD) and post-traumatic stress disorder (PTSD). However, few studies have investigated psychological distress in breast cancer patients during the different phases of their disease. The main aim of this study is to investigate, with appropriate tools, the occurrence of MD, AD and PTSD in a population of breast cancer patients during the clinical course of their disease. We also propose a structured way to detect distress.

Materials and Methods: A total of 67 patients, divided into 3 groups was included in the study: Group 1 (G1) eighteen patients that were evaluated at the time of breast cancer diagnosis; Group 2 (G2) thirty patients that were evaluated at the time of cancer recurrence; Group 3 (G3) nineteen patients with no evidence of disease (NED) at 5-year follow-up. Five key tools were used: a semi-structured psychological interview, the NCCN Distress Thermometer, the Hamilton rating scale for depression, the Hamilton anxiety scale, and the Davidson trauma scale. All patients were evaluated at baseline (T0) and after six months (T1).

Results: Forty-nine of 67 patients (73%) completed both the questionnaires and the semi-structured interview: 15 patients for G1, 20 patients for G2, and 14 patients for G3, respectively. Using the distress thermometer and a semi-structured psychological interview we found a high level of psychological distress in 13/15 patients (87%) at time T0 and in 9/15 (60%) at time T1, (G1); in 18/20 (90%) and in 16/20 (80%), (G2); 7/14 (50%) and 6/14 (43%), (G3). We found a prevalence of depressive disorder of 34%: 10/15 (67%) at time T0 and 5/15 (33%) at time T1, (G1); 8/20 (40%) and 7/20 (35%), (G2); 2/14 (14%) and 2/14 (14%), (G3). We found a prevalence of anxiety of 14.5%: 3/15 (20%) at time T0 and 2/15 (13%) at time T1, (G1); 4/20 (20%) and 4/20 (20%), (G2); 1/14 (7%) and 1/14 (7%), (G3). As for PTSD, we observed a mild level of this disorder, with a prevalence of 5.6%: 2/15 (13%) at T0 and 1/15 (7%) at T1, (G1); 2/20 (10%) and 2/20 (10%), (G2); 1/14 (7%) and 1/14 (7%), (G3).

Conclusions: Because of the high proportion of distress-related disorders, all women with breast cancer should be routinely screened using appropriate psychological tools. Thus, processes to treat women who have elevated psychological distress could be promoted to improve quality cancer care.

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Quality of life, psychological distress and perception of recurrence risk in women undergoing conservative breast surgery and sentinel-node biopsy versus women undergoing routine axillary dissection

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Background: In a prospective longitudinal study we assessed the quality of life and the psychological distress of early breast cancer patients who underwent a quadrantectomy and a sentinel node biopsy (SLNB) with or without a subsequent axillary lymph node dissection (ALND) in a short and long-term follow-up.

Materials and Methods: Quality of life, psychological distress and coping were assessed: one day before surgery, (baseline) then 3, 6, 9, 12 and 18 months after surgery. Quality of life was assessed with the Functional Assessment of Cancer Therapy associated with the Breast module (FACT-B). Psychological distress was assessed using the Hospital Anxiety and Depression Scale and coping to cancer using the Mental Adjustment to Cancer. Subjective perception of being ill related to the type of surgery was assessed with a specific module, in a small sample at 3 months.

Results: Between November 2005 and February 2007, 172 and 62 patients underwent respectively sentinel lymph node biopsy and axillary dissection. The type of surgery did not seem to affect global quality of life at median and long-term but at short-term follow-up; patients recovered sooner after sentinel lymph node biopsy. Patients with axillary dissection experienced significantly poorer quality of life systematically at 3 months after surgery. ALND patients had significantly lower scores than SLNB at 3 months ($P = 0.006$) and a significantly quicker decline ($P < 0.001$). The emotional well-being was always lower for the axillary dissection group, at 3 months. ALND patients had significant ($P = 0.03$) lower scores compared to SLNB patients.

Conclusions: Patients who underwent breast conservative surgery with ALND or only SLNB experience overall high levels of QOL. Level of anxiety was high before surgery in both groups then decreased. We can state that patients in both groups need attention and anxiety medication before surgery. Women should be well-informed about the benefits of SLNB over ALND concerning QOL and post-surgery side effects in a short-term follow-up. Women in the ALND group are more vulnerable at a physical and emotional level and need more attention from the post-surgery nursing and breast surgeon team.

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Oncoplastic surgery but not objectively measured symmetry after breast conserving therapy improves quality of life in breast cancer patients

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Background: After breast conserving therapy (BCT) patients often suffer from pronounced breast asymmetry. The effect on quality of life and sexual function is not well understood. The aim of this study was to investigate the relation between breast symmetry and quality of life in patients after unilateral breast cancer surgery undergoing BCT.

Materials and Methods: Randomly assigned patients from the surgical ward at different time points after surgery were included in this study. Breast symmetry was objectively measured with a new software (breast analyzing tool = BAT) and correlated with standardized quality of life questionnaires (body image scale =BIS; and the EORTC QLQ-BR23) using the *Pearson Correlation Test*. More over a sexual function score was created with a non validated questionnaire and correlated with symmetry. Multivariate analyses were used to investigate the relevance of different factors including age, tumor size, oncoplastic surgery and others for quality of life and symmetry.

Results: 101 patients were included in the study. Symmetry did not correlate with patients' quality of life or sexual function score. Multivariate analyses demonstrated that age ($p = 0.03$) and tumor size ($p = 0.01$) influenced objective measured breast symmetry while only the use of oncoplastic surgery ($p = 0.02$) and age did influence patients' quality of life.

Conclusions: Symmetry of both breasts seems not to play an important role for quality of life in our patients. However, improving the breast shape itself by oncopolastic surgery, may be an important factor for patients' body image and quality of life after BCT.

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Biopsychosocial assessment in breast oncology surgical pathology

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Introduction: The investigation is part of the area of Health Psychology.

Aims: normative data of quality of life, anxiety/depression, body image and satisfaction. Check the various surgeries lead to differences in these variables. Check processing, radical/conservative, is different from the prophylactic/repairer in the variables studied. Compare the values pre-and post-surgical women with prophylactic and restorative surgery.

Sample: 438 patients diagnosed with breast cancer or genetic mutation carriers (BRCA1/2) in surgical treatment.