Table S1. Items developed by the authors to evaluate reasons for changes in sexual quality of life

|  |  |  |
| --- | --- | --- |
|  | **Question** | **Response options** |
| Q1  *Sexual life prior to breast cancer* | Before I was diagnosed with cancer, my sexual life was: | 1. Very unsatisfying 2. Unsatisfying 3. Rather unsatisfying 4. Rather satisfying 5. Satisfying 6. Very satisfying |
| Q2  *Change in sexual life* | Has your sexual life changed from before you were diagnosed with cancer until now? | 1. It has become much worse 2. It has become a little worse 3. It has not changed 4. It has become a little better 5. It has become much better |
| Q3  *The experienced impact of breast cancer treatment on sexual life* | *If the respondent has experienced a change in her sexual life, she is further encouraged to answer:*  Has your sexual life changed due to the breast cancer treatment? | 1. Yes, that is the primary cause 2. Yes, but it is not the primary cause 3. No, my sexual life has changed due to other causes 4. I do not now |
| Q4  *Reasons for aggravation in sexual life* | *If her sexual life has become worse (response option 1) and 2) in Q2)*:  What caused the change in your sexual life from before you were diagnosed with breast cancer until now? | 1. Urinary symptoms (pain in relation to sexual intercourse, dry vagina, urine leakage or similar) 2. Lack of sexual desire/interest 3. Physical malaise (fatigue, nausea or similar) 4. Relationship issues (lack of intimacy, communication or similar) 5. Partner’s sexual problems (erectile dysfunction or similar) 6. New partner 7. Have become single/no partner 8. Have felt less attractive 9. Other (explain) |
| Q5  *Reasons for improvement in sexual life* | *If her sexual life has become better (response option 4) and 5) in Q2):*  What caused the change in your sexual life from before you were diagnosed with breast cancer until now? | 1. Use of sexual aids (local hormone treatment, vaginal lubricants, sex toys or similar) 2. Couples therapy, cognitive therapy or similar support/guidance 3. Increased desire/interest 4. Improved physical condition 5. Relationship improvements (enhanced intimacy, communication or similar) 6. Improvements in partner’s sexual function 7. New partner 8. Have become single/no partner 9. Have felt more attractive 10. Other (explain) |

Table S2. Sociodemographic characteristics of breast cancer survivors included in analysis of sexual dysfunction (sexually active) vs. breast cancer survivors not included in analysis (sexually inactive or no intercourse due to no partner)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Sexually active (N=227)**  **N** | **(%)\*** | **Sexually inactive  (N = 106)**  **N** | **(%)\*** | **P e** |
| **Age**, years  < 50  ≥ 50  Mean ± SD  (range) | 51  176  56.9 ± 9.6  (24-80) | (22)  (78) | 14  92  62.6 ± 10.3  (22-80) | (13)  (87) | <0.05┼  <0.01┼ |
| **Ethnicity**  Caucasian  Other  Missing | 223  3  1 | (99)  (1) | 109  0 | (100)  - | 0.61 |
| **Education,** years  ≤ 13  > 13  Missing | 81  146  - | (36)  (64) | 49  56  1 | (47)  (53) | 0.06 |
| **Relationship status**  Living with a partner  Single  Among BCS with a partner  New partner since BC | 217  9  11 | (96)  (4)  (5) | 44  62  0 | (42)  (58)  - | <0.01┼  0.13 |
| **Menopause status**  - at time of diagnose  Prea  Perib  Postc  Missing  - at time of study entry  Prea  Perib  Postc  Missing | 81  19  126  1  7  9  210  1 | (36)  (8)  (56)  (3)  (4)  (93) | 17  3  86  -  1  2  103  - | (16)  (3)  (81)  (1)  (2)  (97) | <0.01┼  0.94 |
| **Smoking status**  Current  Previous  Never  Missing | 25  90  112  - | (11)  (40)  (49) | 21  48  36  1 | (20)  (46)  (34) | 0.01┼ |
| **Alcohol**  Never drink  Drink  Missing | 35  192  - | (15)  (85) | 23  81  2 | (22)  (78) | 0.14 |
| **BMI**  16-25  25-30  >30  Missing  Mean ± SD  (range) | 116  78  32  1  25.5 ± 4.3  (16.4 - 45.2) | (51)  (35)  (14) | 41  40  24  1  27.1 ± 5.3  (17.0 – 53.9) | (39)  (38)  (23) | 0.06  <0.01┼ |
| **Use of medication**  (>3 days)  Sleep medication  Antidepressants  Anxiety medication | 13  17  10 | (6)  (8)  (5) | 12  14  8 | (12)  (13)  (8) | 0.06  0.09  0.23 |
| **SQOL prior to BC**  Dissatisfied  Satisfied  Missing | 21  204  2 | (9)  (91) | 27  54  25 | (33)  (67) | <0.01┼ |

a Regular menstruation, b Irregular menstruation, c Menstruation stopped,

d Experienced “somewhat” or “a lot”

e chi2 or *t* test, ┼ Level of significance (p<0.05)

\* Calculated based on received responses (excluded missing)

BCSs= Breast cancer survivors, BMI= body mass index, BC= breast cancer, SQOL = sexual quality of life

Table S3. Clinical characteristics of breast cancer survivors included in analysis of sexual dysfunction (sexually active) vs. breast cancer survivors not included in analysis (sexually inactive or no intercourse due to no partner)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Sexually active (N=227)**  **N** | **(%)** | **Sexually inactive**  **(N = 106)**  **N** | **(%)** | **p e** |
| **Median time since surgery**  (range), months | 27.25 (3-132) |  | 26.20 (4-144) |  | 0.87 |
| **New primary BC** | 16 | (11) | 7 | (8) | 0.88 |
| **Tumor grading**  I  II  III  NA1 | 53  116  40  18 | (23)  (51)  (18)  (8) | 17  64  20  5 | (16)  (60)  (19)  (5) | 0.25 |
| **Mean tumor size ± SD** (range)**,** mm | 17.9 **±** 11.9 (0-100) |  | 18.2 **±** 9.8 (0 - 75) |  | 0.79 |
| **Lymph node involvement**  Yes  No  No. of lymph nodes  Median (range) | 79  148  2 (1-16) | (35)  (65) | 33  73  2 (1-31) | (31)  (69) | 0.50  0.43 |
| **Type of surgery**  Lumpectomy  Mastectomy  Reconstruction | 148  79  28 | (65)  (35)  (12) | 69  37  11 | (65)  (35)  (10) | 0.99  0.59 |
| **Treatment**  AET alone  AET combined with:  - Chemotherapy  - Radiotherapy  - Trastuzumab | 9    151  192  35 | (4)    (67)  (85)  (15) | 8  55  87  12 | (8)   (52)  (82)  (11) | 0.17  0.01┼  0.56  0.32 |
| **Current AET**  Letrozole  Tamoxifen | 127  100 | (56)  (44) | 82  24 | (77)  (23) | <0.01┼ |
| **Duration of AET,** months  3-12  13-36  >36  Median (range) | 60  80  87  23.4 (3-118) | (27)  (35)  (38) | 25  48  33  22.0 (3-120) | (24)  (45)  (31) | 0.21  0.80 |

1 Patient had mucinous or micropapillary carcinoma of the breast, or received neoadjuvant chemotherapy

e chi2, median test or *t* test, ┼ Level of significance (p<0.05)

BC= breast cancer, AET = adjuvant endocrine therapy

Table S4. Urogenital and psychosocial scores of breast cancer survivors included in analysis of sexual dysfunction (sexually active) vs. breast cancer survivors not included in analysis (sexually inactive or no intercourse due to no partner)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Instrument** | **Variable** | **Sexually active** | | | **Sexually inactive** | | |  |
|  |  | **N** | **Median** | **Range** | **N** | **Median** | **Range** | **p\*** |
| **ICIQ** | Urogenital symptoms | 206 | 1.5 | 0 - 11 | 33 | 1.0 | 0 - 9 | 0.80 |
| **BDI** | Psychological well-being | 225 | 5.25 | 0 - 32 | 104 | 6.0 | 0 - 31 | 0.74 |
| **CARES** | Body image  Quality of partnered relationship  Single women’s interest in dating | 227    217    9 | 0.33    0.22  1.0 | 0 - 4  0-2.89    0 - 3 | 106  46  51 | 0.33  0.24  1.0 | 0 – 4  0-2.11  0 - 4 | 0.39  0.22  0.85 |

\* Wilcoxon-Man-Whitney test

ICIQ = International Consultation on Incontinence Modular Questionnaire, BDI= Beck Depression Inventory, CARES= Cancer Rehabilitation Evaluation System