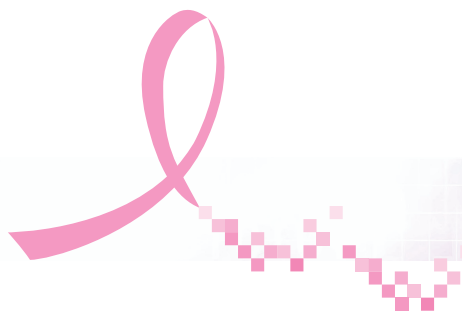


CHAPTER 3
PHYSICAL AND PSYCHOSOCIAL
IMPACT OF BREAST CANCER AND
ITS TREATMENT



CHAPTER 3

PHYSICAL AND PSYCHOSOCIAL IMPACT OF BREAST CANCER AND ITS TREATMENT

I. Introduction

3.1 Being diagnosed with breast cancer can be overwhelming for a woman. During treatment or recovery, women often experience emotional turmoil as a result of physical, psychological and social changes. This chapter analyses the physical

and psychosocial impact of breast cancer and its treatment on the 16,222 patients in the three cohorts. The mean time at which the patients did the survey was two years after initial cancer diagnosis.

Key findings

The patients covered in this report, according to their year of cancer diagnosis, were divided into three cohorts (2006-2010, 2011-2015 and 2016-current) and analysed separately.

Physical impact of treatments

- Overall, two-thirds to three-quarters (65.5%-76.6%) of the patients who had surgery experienced no or minimal physical discomfort, while about one-tenth of them (8.4%-10.3%) experienced severe discomfort. Wound pain (16.3%-22.3%) was the most common form of discomfort after surgery.
- Two-thirds to three-quarters (65.4%-74.1%) of the patients who had radiotherapy experienced no or minimal discomfort. Dry skin (11.5%-16.5%) and skin burns (5.1%-10.5%) were the most common forms of discomfort experienced after radiotherapy.
- Two-fifths to about one-half (40.1%-54.1%) of the patients who had chemotherapy experienced severe physical discomfort due to side effects. Vomiting (10.0%-26.6%) and loss of appetite (10.3%-19.9%) were the most common forms of discomfort experienced during or after chemotherapy.
- About four-fifths (79.3%-83.9%) of the patients who had undergone endocrine therapy experienced no or minimal discomfort. Hot flushes (11.2%-15.0%) was the most common form of discomfort experienced after endocrine therapy.
- The majority (80.1%-87.0%) of the patients who had undergone anti-HER2 targeted therapy experienced

no or minimal discomfort. Fatigue (3.3%-5.3%) was the most common form of discomfort experienced after anti-HER2 targeted therapy.

- Nearly all (96.4%-98.9%) the patients who received complementary and alternative therapies felt no or minimal discomfort.

Psychosocial impact and adjustments after diagnosis and treatment

- At diagnosis, 45.5%-53.0% of the patients accepted their diagnosis with a calm or positive attitude. In contrast, 20.0%-25.3% could not accept their diagnosis.
- After treatment, 24.1%-32.7% of the patients felt that cancer was a wake-up call that caught them by surprise.
- As for other changes, 40.8%-52.8% of the patients reported having a positive change in their outlook on life and 32.4%-44.8% reported having a positive change in their self-image after cancer diagnosis and treatment.
- About three-quarters (74.4%-82.3%) of the patients reported having changes in their lifestyle after diagnosis with breast cancer. A change in diet (69.7%-74.8%) was the most common lifestyle change, followed by increased exercise (57.9%-62.5%). In addition, about one-tenth (11.0%-12.0%) of the patients resigned from their jobs.
- In the patient cohorts, the two most common ways of managing negative emotions were direct verbal expression (49.3%-55.7%) and diverting attention from negative emotions (25.3%-33.2%).

- About a quarter (22.8%-28.2%) of the patients did not worry about recurrence, while one-half to three-fifths (52.5%-58.8%) always or sometimes worried about recurrence. In each cohort, the

proportion of the patients who never worried about recurrence increased with increasing age, while the proportion of the patients who always worried about recurrence decreased with increasing age.

II. Physical discomfort after treatment

A. Physical discomfort after surgery

3.2 Overall, 65.5%-76.6% of the patients who had surgery experienced no or minimal physical discomfort, while 8.4%-10.3% experienced severe discomfort (Figure 3.1). In terms of level of discomfort by type of surgery, the proportion of the patients who reported severe physical discomfort was highest (11.8%-15.8%) among those patients who had undergone both mastectomy and reconstruction (Table 3.1). In addition, wound pain (16.3%-22.3%) was the most common form of discomfort after surgery (Table 3.2).

Figure 3.1: Level of physical discomfort after surgery (N=16,153)

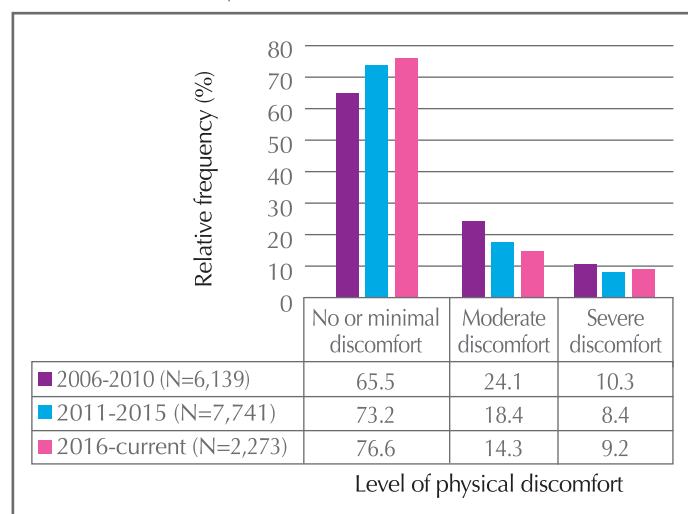


Table 3.1: Level of physical discomfort by type of surgery (N=16,066)

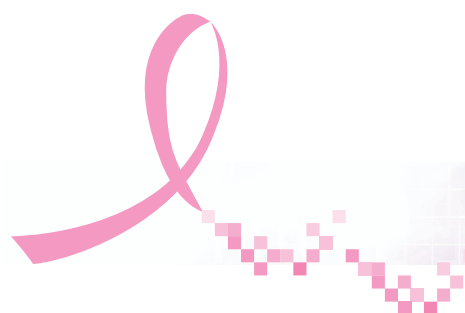
| | Type of surgery | | | | | | | | |
|--------------------------|--|------|------|------------|------|------|-----------------------------|------|------|
| | % for 2006-2010, % for 2011-2015, % for 2016-current | | | | | | | | |
| | Breast-conserving surgery | | | Mastectomy | | | Mastectomy + reconstruction | | |
| No or minimal discomfort | 68.2 | 76.8 | 80.1 | 66.5 | 73.1 | 77.7 | 47.5 | 57.7 | 52.4 |
| Moderate discomfort | 24.7 | 17.9 | 13.2 | 22.0 | 17.1 | 11.9 | 36.7 | 30.4 | 34.1 |
| Severe discomfort | 7.2 | 5.3 | 6.7 | 11.4 | 9.9 | 10.5 | 15.8 | 11.8 | 13.5 |

Total number of patients in each group:

Breast-conserving surgery: 2,154 (for 2006-2010), 2,711 (for 2011-2015), 907 (for 2016-current)

Mastectomy: 3,465 (for 2006-2010), 4,387 (for 2011-2015), 1,161 (for 2016-current)

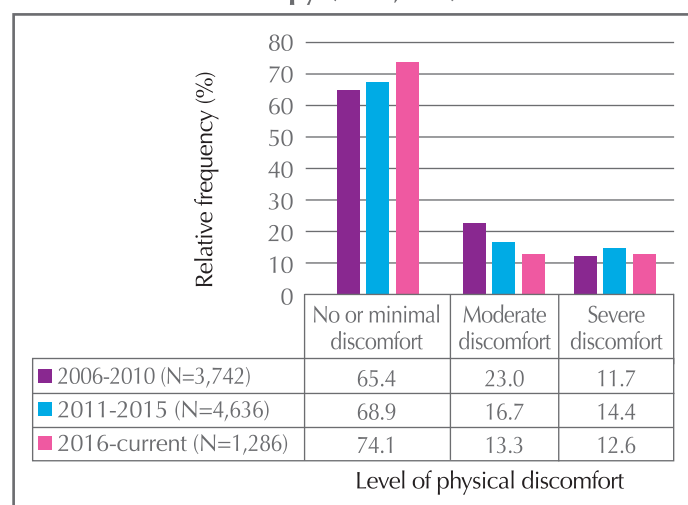
Mastectomy + reconstruction: 499 (for 2006-2010), 597 (for 2011-2015), 185 (for 2016-current)


Table 3.2: Five most common forms of discomfort after surgery (N=16,153)

| | 2006-2010 (N=6,139) % | 2011-2015 (N=7,741) % | 2016-current (N=2,273) % |
|----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Wound pain | 16.3 | 16.8 | 22.3 |
| Wound problems | 4.2 | 9.4 | 15.4 |
| Difficulty in arm movement | 5.2 | 5.8 | 1.5 |
| Numbness | 2.8 | 3.9 | 2.5 |
| Lymphoedema | 2.9 | 2.6 | 1.0 |

B. Physical discomfort after radiotherapy

3.3 About three-quarters (65.4%-74.1%) of the patients who had radiotherapy experienced no or minimal discomfort (Figure 3.2). A higher proportion of the patients who had undergone chest wall irradiation reported having severe discomfort than those who had undergone breast irradiation, regardless of whether or not they had regional lymph nodes irradiation (Table 3.3). In addition, dry skin (11.5%-16.5%) and skin burns (5.1%-10.5%) were the most common forms of discomfort the patients experienced after radiotherapy (Table 3.4).

Figure 3.2: Level of physical discomfort after radiotherapy (N=9,664)

Table 3.3: Level of physical discomfort after radiotherapy by irradiated regions (N=6,431)

| | Irradiated regions | | | | | | | | | | | |
|--------------------------|--------------------|------|------|-------------------------------|------|------|------------|------|------|-----------------------------------|------|------|
| | Breast | | | Breast + regional lymph nodes | | | Chest wall | | | Chest wall + regional lymph nodes | | |
| No or minimal discomfort | 69.7 | 69.9 | 71.4 | 70.9 | 72.0 | 80.5 | 61.3 | 66.3 | 73.0 | 64.7 | 66.3 | 74.4 |
| Moderate discomfort | 22.5 | 16.3 | 13.1 | 20.4 | 16.7 | 7.3 | 24.8 | 17.3 | 10.8 | 20.1 | 15.3 | 9.1 |
| Severe discomfort | 7.8 | 13.8 | 15.6 | 8.7 | 11.3 | 12.2 | 13.9 | 16.4 | 16.2 | 15.2 | 18.3 | 16.5 |

Total number of patients in each group:

Breast: 1,185 (for 2006-2010), 1,243 (for 2011-2015), 360 (for 2016-current)

Breast + regional lymph nodes: 230 (for 2006-2010), 257 (for 2011-2015), 41 (for 2016-current)

Chest wall: 375 (for 2006-2010), 329 (for 2011-2015), 74 (for 2016-current)

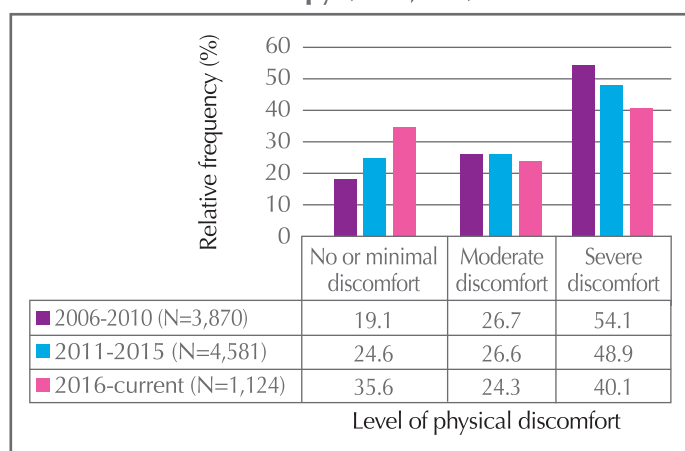
Chest wall + regional lymph nodes: 993 (for 2006-2010), 1,090 (for 2011-2015), 254 (for 2016-current)

Table 3.4: Five most common forms of discomfort after radiotherapy (N=9,664)

| | 2006-2010 (N=3,742) % | 2011-2015 (N=4,636) % | 2016-current (N=1,286) % |
|-----------------|-----------------------------|-----------------------------|--------------------------------|
| Dry skin | 11.5 | 16.5 | 14.3 |
| Skin burns | 10.5 | 8.9 | 5.1 |
| Pain | 5.7 | 6.6 | 7.1 |
| Fatigue | 1.3 | 0.9 | 1.1 |
| Skin ulceration | 3.3 | 2.3 | 0.7 |

C. Physical discomfort after chemotherapy

3.4 Two-fifths to about one-half (40.1%-54.1%) of the patients who had chemotherapy experienced severe physical discomfort due to side effects (Figure 3.3). Vomiting (10.0%-26.6%) and loss of appetite (10.3%-19.9%) were the most common forms of discomfort experienced during or after chemotherapy in the patient cohorts (Table 3.5).

Figure 3.3: Level of physical discomfort after chemotherapy (N=9,575)**Table 3.5: Five most common forms of discomfort after chemotherapy (N=9,575)**

| | 2006-2010 (N=3,870) % | 2011-2015 (N=4,581) % | 2016-current (N=1,124) % |
|----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Vomiting | 26.6 | 10.0 | 10.1 |
| Loss of appetite | 19.9 | 10.3 | 14.9 |
| Hair loss | 17.3 | 6.4 | 6.0 |
| Weakness | 10.7 | 9.7 | 15.2 |
| Pain (including bone pain) | 8.0 | 7.2 | 1.2 |



D. Physical discomfort after endocrine therapy

3.5 About four-fifths (79.3%-83.9%) of the patients who had undergone endocrine therapy experienced no or minimal discomfort (Figure 3.4). Hot flushes (11.2%-15.0%) was the most common form of discomfort experienced after endocrine therapy in the patient cohorts (Table 3.6).

Figure 3.4: Level of physical discomfort after endocrine therapy (N=10,426)

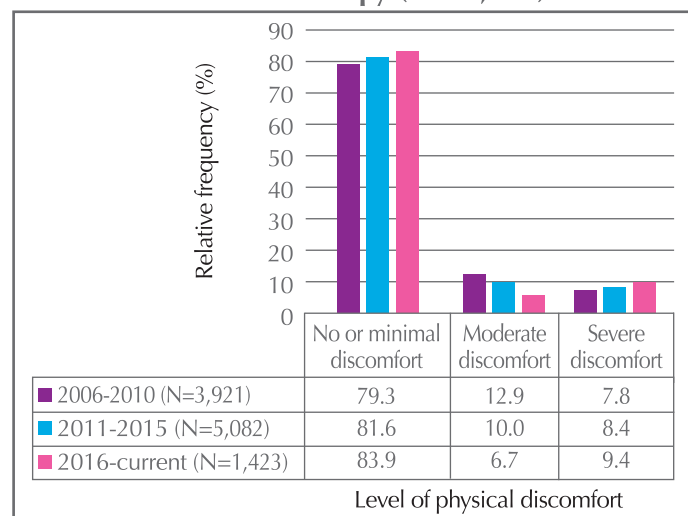


Table 3.6: Five most common forms of discomfort after endocrine therapy (N=10,426)

| | 2006-2010 (N=3,921) % | 2011-2015 (N=5,082) % | 2016-current (N=1,423) % |
|----------------------|-----------------------------|-----------------------------|--------------------------------|
| Hot flushes | 11.2 | 14.7 | 15.0 |
| Bone pain | 6.6 | 7.1 | 9.3 |
| Tiredness | 4.0 | 4.8 | 7.2 |
| Menstrual disorder | 4.1 | 4.1 | 3.4 |
| Emotionally unstable | 1.7 | 2.1 | 1.1 |

E. Physical discomfort after anti-HER2 targeted therapy

3.6 The majority (80.1%-87.0%) of the patients who had undergone anti-HER2 targeted therapy experienced no or minimal discomfort (Figure 3.5). Fatigue (3.3%-5.3%) was the most common form of discomfort experienced after anti-HER2 targeted therapy in the patient cohorts (Table 3.7).

Figure 3.5: Level of physical discomfort after anti-HER2 targeted therapy (N=2,048)

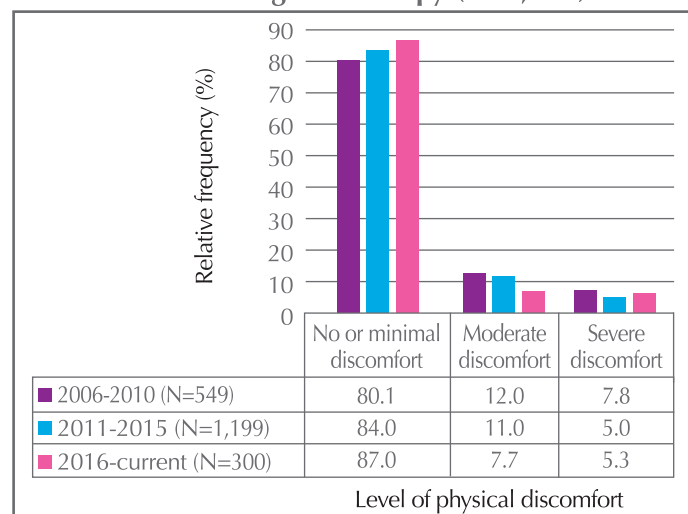
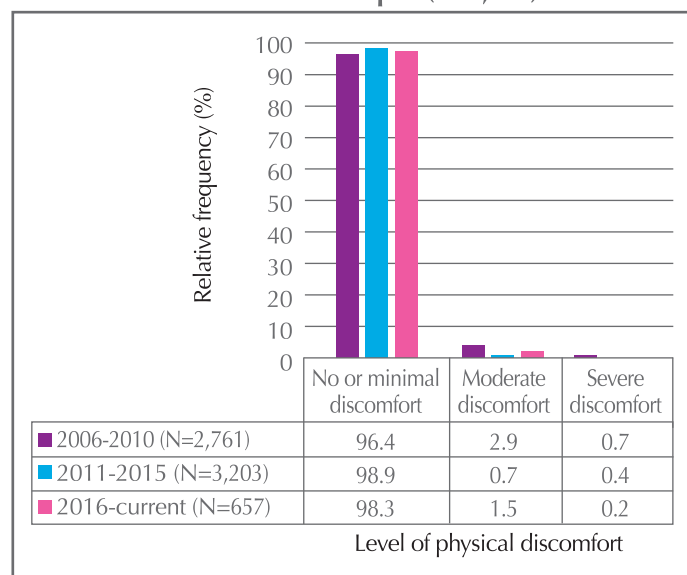


Table 3.7: Five most common forms of discomfort after anti-HER2 targeted therapy (N=2,048)

| | 2006-2010 (N=549) | 2011-2015 (N=1,199) | 2016-current (N=300) |
|-----------------------|----------------------|------------------------|-------------------------|
| | % | % | % |
| Fatigue | 3.8 | 5.3 | 3.3 |
| Pain | 2.2 | 2.0 | 4.3 |
| Numbness | 1.5 | 1.3 | 1.7 |
| Other organs affected | 1.8 | 0.9 | 0.3 |
| Dizziness | 1.1 | 1.3 | 0.3 |

F. Physical discomfort after complementary and alternative therapies

3.7 Nearly all (96.4%-98.9%) the patients who received complementary and alternative therapies felt no or minimal discomfort (Figure 3.6).

Figure 3.6: Level of physical discomfort after complementary and alternative therapies (N=6,621)

III. Psychosocial impact and adjustments after diagnosis and treatment

A. Psychosocial impact after diagnosis and treatment

3.8 At diagnosis, 45.5%-53.0% of the patients accepted their diagnosis with a calm or positive attitude. In contrast, 20.0%-25.3% could not accept their

diagnosis (Table 3.8). After treatment, 24.1%-32.7% of the patients felt that cancer was a wake-up call that caught them by surprise. As for other changes, 40.8%-52.8% of the patients reported having a positive change in their outlook on life and 32.4%-44.8% reported having a positive change in their self-image after cancer diagnosis and treatment (Table 3.8).



Table 3.8: Psychosocial impact of breast cancer

| | 2006-2010 | 2011-2015 | 2016-current |
|---|------------------|------------------|------------------|
| | % | % | % |
| Feelings at time of breast cancer diagnosis (N=15,776) | (N=5,988) | (N=7,529) | (N=2,259) |
| Acceptance and positive attitude to fight | 23.2 | 19.5 | 24.5 |
| Calm acceptance | 22.3 | 26.9 | 28.5 |
| Acceptance with depression | 32.0 | 27.5 | 20.3 |
| Lack of acceptance ("It cannot be true.") | 20.0 | 24.7 | 25.3 |
| Acceptance with anger ("Something must be wrong.") | 2.4 | 1.4 | 1.4 |
| Feelings after breast cancer treatments (N=11,306) | (N=4,759) | (N=5,168) | (N=1,379) |
| Cancer was a wake-up call that caught patient by surprise | 31.8 | 32.7 | 24.1 |
| Life was not fair | 54.1 | 56.3 | 63.8 |
| Cancer changed patient's value system | 6.7 | 5.4 | 5.9 |
| Cancer took away something from patient | 7.4 | 5.6 | 6.1 |
| Change in outlook on life (N=15,869) | (N=6,024) | (N=7,536) | (N=2,309) |
| Positive | 51.4 | 52.8 | 40.8 |
| Negative | 6.5 | 7.2 | 8.9 |
| No change | 42.1 | 40.0 | 50.3 |
| Change in self-image (N=15,862) | (N=6,035) | (N=7,518) | (N=2,309) |
| Positive | 38.9 | 44.8 | 32.4 |
| Negative | 8.9 | 9.3 | 10.7 |
| No change | 52.2 | 45.8 | 57.0 |

3.9 In the patient cohorts, positive change in outlook on life was negatively associated with increasing age. The proportions of the patients who reported having no change in the outlook on life increased with age (Table 3.9).

3.10 In the patient cohorts, positive change in self-image was negatively associated with increasing age (Table 3.10).

Table 3.9: Change in outlook on life by age group (N=15,684)

| | Age group | | | | | | | | | | | | | | |
|---|--|------|------|-------|------|------|--------|--|------|-------|------|------|------|------|------|
| | % for 2006-2010, % for 2011-2015, % for 2016-current | | | | | | | | | | | | | | |
| | <40 | | | 40-49 | | | 50-59 | | | 60-69 | | | 70+ | | |
| Positive | 65.1 | 65.8 | 60.1 | 56.5 | 60.2 | 49.8 | 49.4 | 51.7 | 43.9 | 39.9 | 42.8 | 26.8 | 29.2 | 41.3 | 23.1 |
| Negative | 3.9 | 5.7 | 7.1 | 6.4 | 6.6 | 7.8 | 6.9 | 7.7 | 8.6 | 7.8 | 8.4 | 10.0 | 6.3 | 6.1 | 11.1 |
| No change | 31.0 | 28.4 | 32.8 | 37.1 | 33.1 | 42.4 | 43.7 | 40.6 | 47.5 | 52.3 | 48.8 | 63.1 | 64.6 | 52.5 | 65.8 |
| Total number of patients in each group: | | | | | | | | | | | | | | | |
| <40: | 642 (for 2006-2010), 644 (for 2011-2015), 183 (for 2016-current) | | | | | | 60-69: | 770 (for 2006-2010), 1,508 (for 2011-2015), 548 (for 2016-current) | | | | | | | |
| 40-49: | 2,280 (for 2006-2010), 2,236 (for 2011-2015), 602 (for 2016-current) | | | | | | 70+: | 319 (for 2006-2010), 537 (for 2011-2015), 199 (for 2016-current) | | | | | | | |
| 50-59: | 1,948 (for 2006-2010), 2,535 (for 2011-2015), 733 (for 2016-current) | | | | | | | | | | | | | | |

Table 3.10: Change in self-image by age group (N=15,682)

| | Age group | | | | | | | | | | | | | | |
|---|--|------|------|-------|------|------|--------|--|------|-------|------|------|------|------|------|
| | % for 2006-2010, % for 2011-2015, % for 2016-current | | | | | | | | | | | | | | |
| | <40 | | | 40-49 | | | 50-59 | | | 60-69 | | | 70+ | | |
| Positive | 44.4 | 49.5 | 37.6 | 41.5 | 49.8 | 40.0 | 39.4 | 44.9 | 33.8 | 32.5 | 38.4 | 24.4 | 25.0 | 38.4 | 22.3 |
| Negative | 9.0 | 13.2 | 10.2 | 9.7 | 9.2 | 11.2 | 8.6 | 9.4 | 9.4 | 8.2 | 8.6 | 10.4 | 5.6 | 7.3 | 13.7 |
| No change | 46.6 | 37.4 | 52.2 | 48.8 | 41.0 | 48.8 | 52.0 | 45.7 | 56.8 | 59.4 | 52.9 | 65.3 | 69.4 | 54.3 | 64.0 |
| Total number of patients in each group: | | | | | | | | | | | | | | | |
| <40: | 646 (for 2006-2010), 645 (for 2011-2015), 186 (for 2016-current) | | | | | | 60-69: | 770 (for 2006-2010), 1,506 (for 2011-2015), 550 (for 2016-current) | | | | | | | |
| 40-49: | 2,289 (for 2006-2010), 2,231 (for 2011-2015), 598 (for 2016-current) | | | | | | 70+: | 320 (for 2006-2010), 534 (for 2011-2015), 197 (for 2016-current) | | | | | | | |
| 50-59: | 1,949 (for 2006-2010), 2,527 (for 2011-2015), 734 (for 2016-current) | | | | | | | | | | | | | | |

B. Psychosocial adjustments and coping strategies

3.11 Of the 16,222 patients in the three cohorts, about three-quarters (2006-2010: 80.6%; 2011-2015: 82.3%; 2016-current: 74.4%) reported having changes in their lifestyle after diagnosis with breast cancer. A change in diet (69.7%-74.8%) was the most common lifestyle change, followed by increased exercise (57.9%-62.5%). In addition,

about one-tenth (11.0%-12.0%) of the patients resigned from their jobs (Table 3.11).

3.12 In the patient cohorts, the two most common ways of managing negative emotions were direct verbal expression (49.3%-55.7%) and diverting attention from negative emotions (25.3%-33.2%) (Table 3.11).



Table 3.11: Psychosocial adjustments and coping strategies for survivorship

| | 2006-2010 | 2011-2015 | 2016-current |
|--|------------------|------------------|------------------|
| | % | % | % |
| Types of lifestyle changes (N=13,048) | (N=4,945) | (N=6,363) | (N=1,740) |
| Changing diet | 73.0 | 74.8 | 69.7 |
| Doing more exercise | 60.3 | 62.5 | 57.9 |
| Taking health supplements | 25.4 | 19.2 | 17.9 |
| Reducing workload | 20.4 | 18.1 | 17.4 |
| Quitting job | 12.0 | 11.0 | 12.0 |
| Ways of managing negative emotions (N=15,968) | (N=5,989) | (N=7,651) | (N=2,328) |
| Direct verbal expression | 55.3 | 55.7 | 49.3 |
| Divert attention from them | 33.2 | 32.7 | 25.3 |
| Ignoring them | 11.7 | 10.2 | 11.8 |
| Feeling depressed | 8.1 | 6.2 | 5.6 |
| Others | 7.2 | 12.7 | 14.7 |
| Levels of worry about recurrence (N=15,902) | (N=6,037) | (N=7,574) | (N=2,291) |
| Never | 22.8 | 28.2 | 22.8 |
| Seldom | 18.4 | 19.3 | 21.3 |
| Sometimes | 47.5 | 42.4 | 43.0 |
| Always | 11.3 | 10.1 | 12.8 |

C. Level of worry about recurrence

3.13 About a quarter (22.8%-28.2%) of the patients did not worry about recurrence, while one-half to three-fifths (52.5%-58.8%) always or sometimes worried about recurrence (Table 3.11). The level of worry about recurrence showed correlation with

the patients' age: the proportion of the patients who never worried about recurrence increased with increasing age, while the proportion of the patients who always worried about recurrence decreased with increasing age (Table 3.12).

Table 3.12: Level of worry about recurrence by age group (N=15,713)

| | Age group | | | | | | | | | | | | | | |
|-----------|--|------|------|-------|------|------|-------|------|------|-------|------|------|------|------|------|
| | % for 2006-2010, % for 2011-2015, % for 2016-current | | | | | | | | | | | | | | |
| | <40 | | | 40-49 | | | 50-59 | | | 60-69 | | | 70+ | | |
| Never | 14.7 | 13.3 | 8.1 | 15.4 | 19.0 | 12.1 | 22.5 | 27.3 | 20.7 | 38.8 | 39.9 | 34.8 | 57.8 | 58.1 | 45.9 |
| Seldom | 19.7 | 15.8 | 20.0 | 19.0 | 19.3 | 21.2 | 17.9 | 20.9 | 22.4 | 17.0 | 19.3 | 22.1 | 17.1 | 15.6 | 17.3 |
| Sometimes | 53.9 | 54.8 | 53.5 | 52.9 | 49.6 | 51.3 | 48.3 | 42.1 | 44.9 | 34.9 | 33.5 | 32.9 | 20.6 | 22.2 | 25.4 |
| Always | 11.8 | 16.1 | 18.4 | 12.7 | 12.0 | 15.4 | 11.4 | 9.8 | 12.0 | 9.3 | 7.3 | 10.2 | 4.4 | 4.1 | 11.4 |

Total number of patients in each group:

| | | | |
|----------------|--|---------------|--|
| <40: | 646 (for 2006-2010), 646 (for 2011-2015), 185 (for 2016-current) | 60-69: | 771 (for 2006-2010), 1,504 (for 2011-2015), 538 (for 2016-current) |
| 40-49: | 2,303 (for 2006-2010), 2,271 (for 2011-2015), 604 (for 2016-current) | 70+: | 315 (for 2006-2010), 532 (for 2011-2015), 185 (for 2016-current) |
| 50-59: | 1,937 (for 2006-2010), 2,541 (for 2011-2015), 735 (for 2016-current) | | |