Hong Kong Breast Cancer Registry Report No. 17
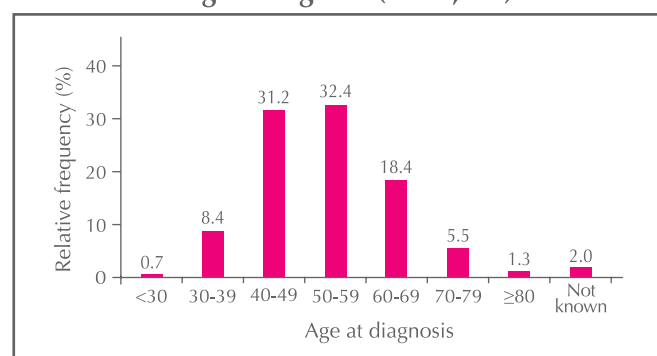
KEY FINDINGS

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During the COVID-19 pandemic, on-site recruitment was suspended especially in public hospitals, leading to a skewed public-private distribution of participants. Although the number of registrations from public hospitals has gradually increased in the post-pandemic era, recovery takes time. To partial out the impact of COVID-19, detailed local facts of breast cancer (Chapters 1-3) were drawn from patients who were diagnosed between 2006 and 2018, while the patient characteristics and disease pattern of patients who were diagnosed from 2019 onwards are reported in Chapter 4.

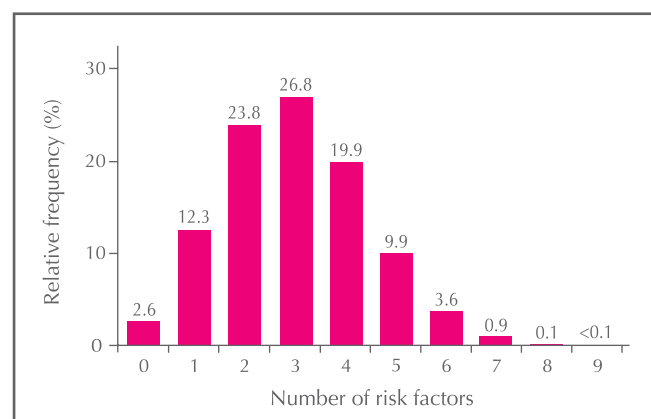## Local facts of breast cancer in Hong Kong

Patient characteristics

▶ Of the 20,104 patients who were diagnosed with breast cancer between 2006 and 2018 and recruited in the HKBCR, two-thirds of the patients were aged between 40 and 59, with the median age at 52.3.

Distribution of age at diagnosis (N=20,104)

▶ About 60% of the patients had three or more common risk factors, while only 2.6% had none.

Distribution of risk factors among patients at diagnosis (N=20,104)

▶ The 10 most common risk factors of breast cancer, with the respective proportions of risk exposure, are listed below:

	%
Lack of exercise (<3 hours / week)	77.6
No breastfeeding	66.0
Being overweight/obese	38.9
High level of stress (>50% of time)	37.0
No childbirth/first live birth after age 35	27.4
Family history of breast cancer	15.1
Diet rich in meat/dairy products	14.1
Early menarche (<12 years old)	14.1
Habit of drinking alcohol	5.3
Use of hormone replacement therapy	3.5

• The top four common risk factors were lack of exercise, no breastfeeding, being overweight/obese and high level of stress. They are all modifiable and women are encouraged to take primary preventive actions, i.e. maintaining a healthy lifestyle, in order to reduce their risk of breast cancer.

► Of the patients aged 40 or above, 66.5% had never undergone mammography (MMG), while less than a quarter had regular MMG. Patients with lower education levels and lower monthly household income had lower proportion of undergoing regular MMG. The findings reflected that the breast screening habits were poor, and more should be done to enhance women's awareness of regular check-ups.

Mammography screening habit by age group (N=17,866)

	Age group, %			
	40-49 **(N=6,268)**	**50-59** **(N=6,516)**	**60-69** **(N=3,703)**	**≥70** **(N=1,379)**
Never	67.9	62.0	65.6	84.0
Occasional	11.6	13.3	14.0	8.2
Regular*	19.3	23.2	18.8	6.2
Not known	1.2	1.5	1.6	1.6

Mammography screening habit by education level (N=17,718)

	Education level, %			
	No schooling / kindergarten **(N=916)**	**Primary school** **(N=4,588)**	**Secondary school** **(N=8,980)**	**Matriculation or above** **(N=3,234)**
Never	86.4	74.9	66.3	50.0
Occasional	6.3	10.9	12.0	17.5
Regular*	6.6	13.2	20.1	31.0
Not known	0.8	1.0	1.6	1.4

Mammography screening habit by monthly household income (HK$) (N=9,485)

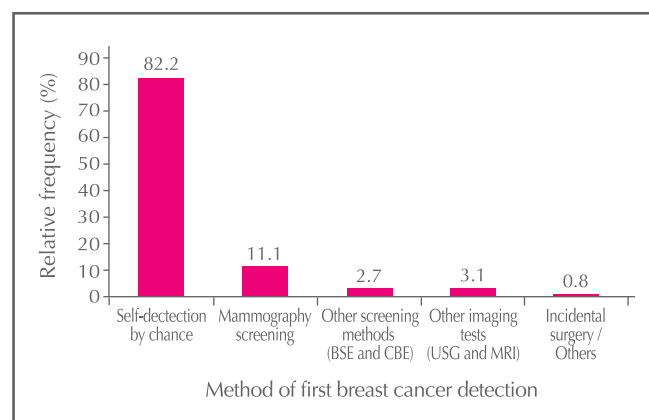|	Monthly household income (HK$), %			
	<10,000 **(N=1,794)**	**10,000 – 29,999** **(N=4,230)**	**30,000 – 59,999** **(N=2,126)**	**≥60,000** **(N=1,335)**
Never	73.6	66.5	53.3	40.3
Occasional	10.0	12.7	16.5	19.5
Regular*	14.9	19.6	28.9	38.9
Not known	1.6	1.3	1.4	1.3

* "Regular" is defined as having the breast screening test every 1-3 years
Note: The above tables included patients aged 40 or above only.

Disease pattern

▶ The primary method of first cancer detection was self-detection by chance.

▶ The proportion of stages 0-I cancer was higher among MMG-detected cases compared to self-detected cases. Also, MMG-detected tumours were smaller than those self-detected by chance, reflecting that screening could detect cancer earlier.

▶ The most common cancer stage at diagnosis was stage II (35.8%) followed by stage I (31.0%) and stages III-IV (16.3%). In addition, 12.8% of the patients were diagnosed with stage 0 cancer.

Methods of first breast cancer detection in the patient cohort (N=19,558)

BSE: breast self-examination; CBE: clinical breast examination;
USG: breast ultrasound screening; MRI: magnetic resonance imaging

Methods of first breast cancer detection by cancer stage (N=18,791)

	Cancer stage, %					
	0	I	IIA	IIB	III	IV
Self-detection by chance (N=15,408)	8.6	30.0	27.1	14.6	16.7	3.1
Mammography screening (N=2,123)	41.7	42.3	10.6	2.4	2.5	0.6
Other screening methods (BSE and CBE) (N=518)	15.4	39.0	23.2	10.2	9.8	2.3
Other imaging tests (USG and MRI) (N=584)	29.1	48.1	14.7	3.3	3.6	1.2
Incidental surgery / Others (N=158)	23.4	36.1	19.6	6.3	10.1	4.4

BSE: breast self-examination; CBE: clinical breast examination; USG: breast ultrasound screening; MRI: magnetic resonance imaging
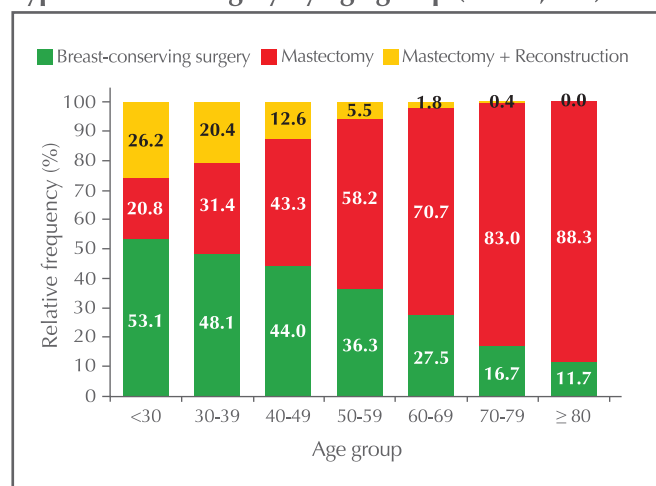
Cancer stage at diagnosis (N=20,656)

Treatment

▶ Of the patients, 15.2% received care at private medical services, 50.9% received care at public medical services, and 33.9% received care at both private and public medical services.

▶ The number of treatment modalities increased with increasing cancer stage, showing that combinations of treatments were usually used to treat breast cancer effectively.
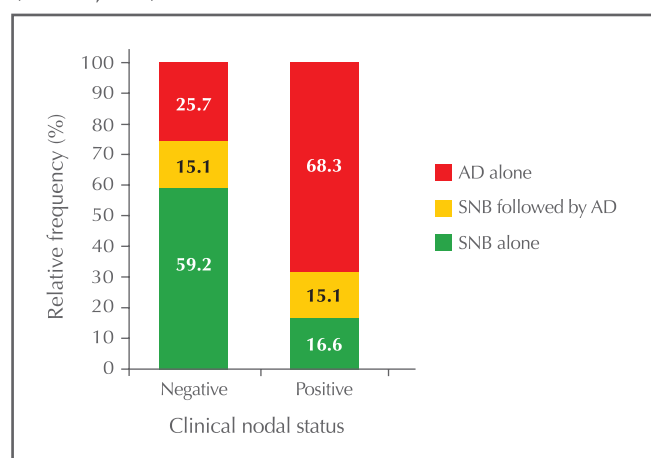
Number of treatment modalities by cancer stage (N=19,821)

	Cancer stage, %					
	0 (N=2,652)	**I** (N=6,410)	**IIA** (N=4,893)	**IIB** (N=2,495)	**III** (N=2,830)	**IV** (N=541)
0	0.3	0.0	0.0	0.1	<0.1	0.9
1	39.6	6.4	2.6	1.4	0.9	6.8
2	50.3	31.9	18.1	6.7	2.7	14.6
3	8.3	42.3	36.5	26.4	17.2	30.3
4	1.2	16.2	37.0	55.3	64.1	34.8
5	0.2	3.2	5.8	10.1	15.1	12.6

► Nearly all patients underwent surgery as part of their treatment. The proportion of patients who underwent mastectomy was positively correlated with increasing age.

► Sentinel node biopsy alone was more commonly performed on patients with negative clinical nodal status than those with positive clinical nodal status, while axillary dissection alone was more commonly performed on the patients with positive clinical nodal status than those with negative clinical nodal status.

Type of breast surgery by age group (N=19,691)

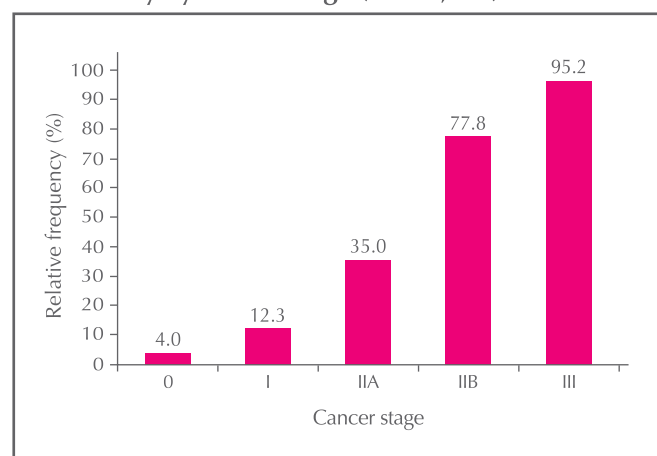**Type of nodal surgery by clinical nodal status (N=18,907)**

SNB: sentinel node biopsy; AD: axillary dissection

► The proportions of the patients who underwent breast-conserving surgery and received radiotherapy afterwards were similar across cancer stages, while the proportion of patients who underwent mastectomy and also received radiotherapy increased significantly with progressing cancer stage.

Use of radiotherapy among patients who underwent breast-conserving surgery by cancer stage (N=7,201)
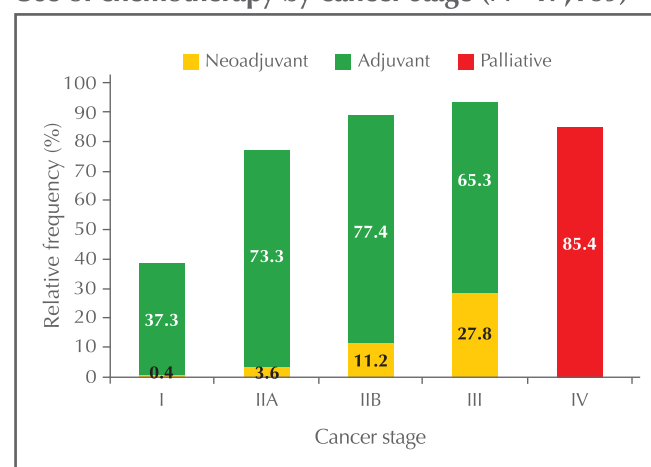

► The use of neoadjuvant chemotherapy was positively correlated with progressing cancer stage from stage I to III, while the overall use of curative intent chemotherapy also increased.

Use of chemotherapy by cancer stage (N=17,169)

► For patients with invasive breast cancer, about 75% or more received endocrine therapy, while for patients with in situ breast cancer, only 15.8% received endocrine therapy.
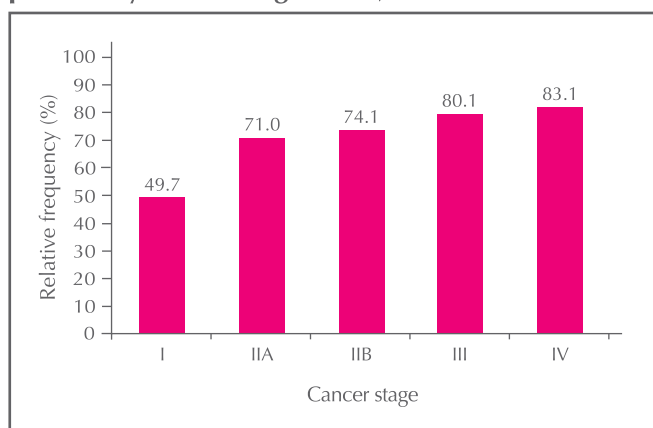
Use of radiotherapy among patients who underwent mastectomy by cancer stage (N=11,970)

Use of endocrine therapy by cancer stage (N=19,754)

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► The use of anti-HER2 targeted therapy was much lower for stage I patients, and the proportions increased with increasing cancer stage among stage II or above patients.

Use of anti-HER2 targeted therapy in HER2 positive patients by cancer stage (N=3,637)
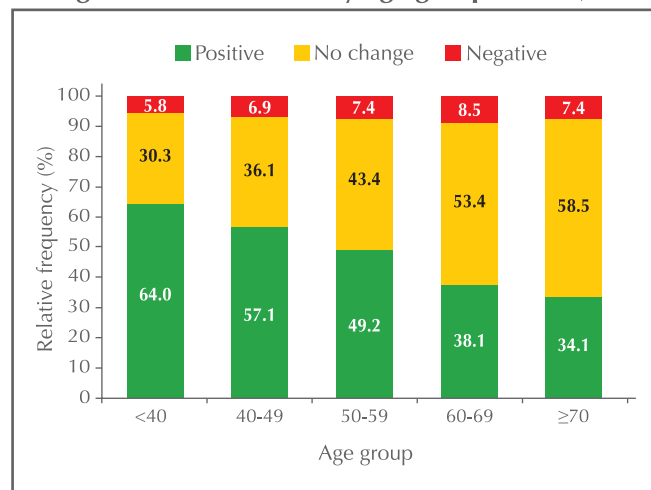

Patient status

► A total of 18,872 patients had been followed up at least once since registration, with the median follow-up period of 6.3 years, and 1,708 patients died from breast cancer.

► In the cohort, 2.5% experienced only locoregional recurrence, 3.2% experienced only distant recurrence, and 2.3% experienced both locoregional and distant recurrence.

► The most common sites for locoregional recurrence were breast (39.5%) and axilla (32.7%), while the top four organs involved in distant recurrence were bone (59.8%), lung (47.2%), liver (39.1%) and brain (16.0%).
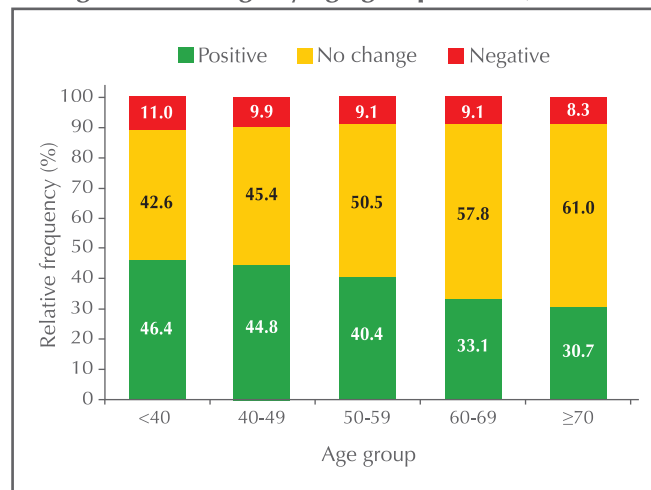
Physical and psychological impact of breast cancer

► The majority of patients experienced no or minimal physical discomfort after undergoing surgery, radiotherapy, endocrine therapy and targeted therapy, while about half of the patients who had chemotherapy experienced severe physical discomfort due to side effects.

► Positive changes in outlook on life and self-image were negatively associated with increasing age.

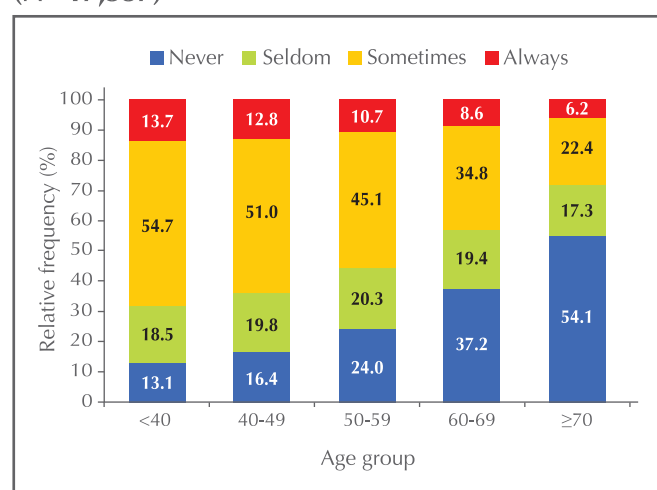**Change in outlook on life by age group (N=17,539)**

Change in self-image by age group (N=17,535)

▶ The proportion of patients who never worried about recurrence increased with increasing age, while the proportion of patients who always worried about recurrence decreased with increasing age.
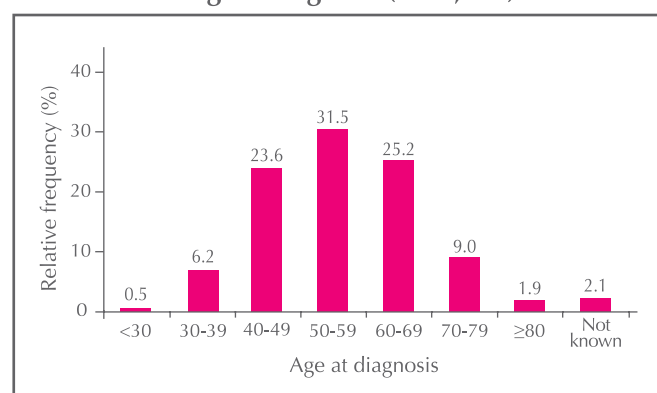
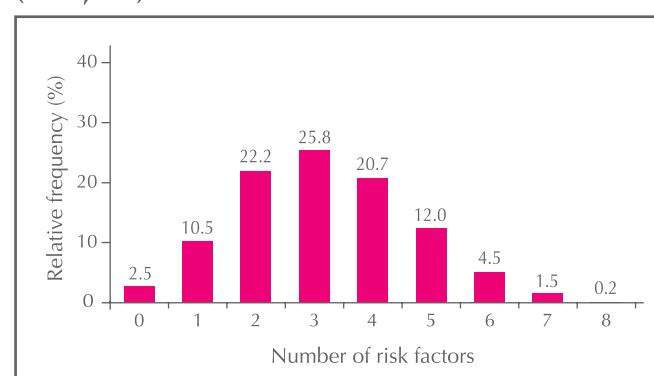**Level of worry about recurrence by age group (N=17,537)**
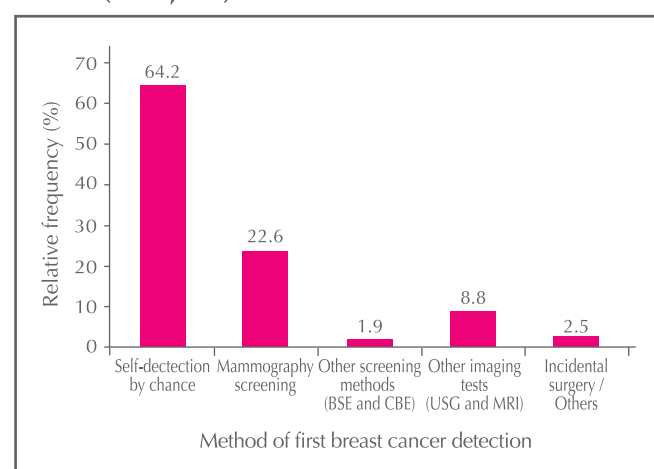

▶ Of the patients, 64.7% had three or more common risk factors, while only 2.5% had none.

Distribution of risk factors among patients at diagnosis (N=5,749)

Breast cancer under COVID-19 pandemic

▶ Of the 5,967 patients who were diagnosed between 2019 and 2025, about 55% were aged between 40 and 59, with the median age at 56.4.

Distribution of age at diagnosis (N=5,749)

▶ The primary method of first breast cancer detection in the cohort was still self-detection by chance (64.2%), while detection through mammography screening constituted 22.6%.
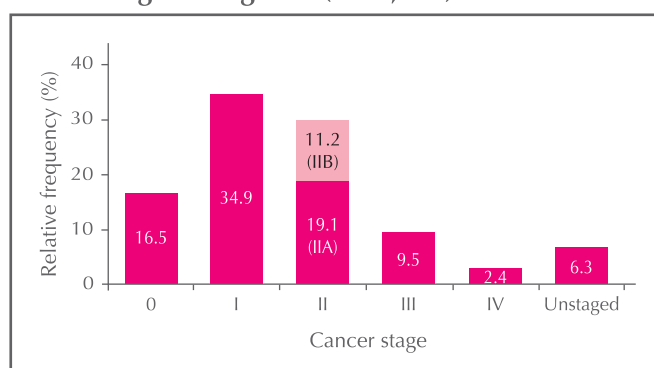
Methods of first breast cancer detection in the patient cohort (N=3,460)

BSE: breast self-examination; CBE: clinical breast examination;
USG: breast ultrasound screening; MRI: magnetic resonance imaging

► The most common cancer stage at diagnosis was stage I (34.9%) followed by stage II (30.3%) and stages III-IV (11.9%). In addition, 16.5% of the patients were diagnosed with stage 0 cancer.

Cancer stage at diagnosis (N = 3,514)

► Of the patients, 39.0% received care at private medical services, 26.3% received care at public medical services, and 34.7% received care at both private and public medical services. It might imply that the public-private distribution of participants has become skewed towards the private sector due to suspension of on-site recruitment in public hospitals during the pandemic. Further actions are being taken to increase the registrations at public hospitals in order to capture the true picture of breast cancer patients in Hong Kong.

Report

Bulletin