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Special Article

Cancer Statistics in Korea: Incidence, Mortality, Survival, and Prevalence in 2022

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Purpose The current study provides national cancer statistics and their secular trends in Korea, including incidence, mortality, survival, and prevalence in 2022, with international comparisons.

Materials and Methods Cancer incidence, survival, and prevalence rates were calculated using the Korea National Cancer Incidence Database (1999-2022), with survival follow-up until December 31, 2023. Mortality data obtained from Statistics Korea, while international comparisons were based on GLOBOCAN data.

Results In 2022, 282,047 newly diagnosed cancer cases (age-standardized rate [ASR], 287.0 per 100,000) and 83,378 deaths from cancer (ASR, 65.7 per 100,000) were reported. The proportion of localized-stage cancers increased from 45.6% in 2005 to 50.9% in 2022. Stomach, colorectal, and breast cancer showed increased localized-stage diagnoses by 18.1, 18.5, and 9.9 percentage points, respectively. Compared to 2001-2005, the 5-year relative survival (2018-2022) increased by 20.4 percentage points for stomach cancer, 7.6 for colorectal cancer, and 5.6 for breast cancer. Korea had the lowest cancer mortality among countries with similar incidence rates and the lowest mortality-to-incidence (M/I) ratios for these cancers. The 5-year relative survival (2018-2022) was 72.9%, contributing to over 2.59 million prevalent cases in 2022.

Conclusion Since the launch of the National Cancer Screening Program in 2002, early detection has improved, increasing the diagnosis of localized-stage cancers and survival rates. Korea recorded the lowest M/I ratio among major comparison countries, demonstrating the effectiveness of its National Cancer Control Program.

Key words Neoplasms, Incidence, Mortality, Survival, Prevalence, Korea

Introduction

Cancer is one of the leading causes of death worldwide, with an estimated 19.9 million new cancer cases and 9 million deaths worldwide in 2022 [1]. In Korea, cancer has been the leading cause of death since 1983 [2]. In response to this public health threat, the National Plan for Cancer Control was implemented in 1996, and the 4th stage is in effect since 2021. As a fundamental part of the Plan, the Korea Central Cancer Registry publishes cancer registration statistics every year. The National Cancer Screening Program, implemented in 2002, currently provides screening services for stomach, colorectal, breast, cervical, liver and lung cancers in Korea [3]. This has contributed to increases in localized stage diagnosis and survival rates. In this study, we report the most recent nationwide statistics on cancer incidence, survival, prevalence, and mortality, and their temporal trends. Additionally, we provide international comparisons of cancer incidence and mortality to contextualize Korea's cancer burden in the global landscape.

Materials and Methods

1. Data sources

Annual cancer statistics in Korea are calculated using a national and population-based database of cancer occurrence, the Korea National Cancer Incidence Database (KNCI DB). Every year, the Korea Central Cancer Registry (KCCR) collects information on patients diagnosed with cancer at hospitals across the country during the past year. The data from the previous year is backed up with information compiled by central and 11 regional cancer registries, including information on cancer patients missed in hospital-based registrations. Hence, it takes 2 years to complete and calculate the year's KNCI DB and cancer statistics. The KCCR has reported nationwide statistics since 1999; other detailed information on the KCCR and KNCI DB is provided in our previous report [3]. Completeness is an important indicator of data quality, and the 2021 KNCI DB was estimated to be 98.2% complete using the method proposed by Ajiki et al. [4].

Annual mid-year population data and recently updated

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mortality data including causes of death from 1983 were obtained from Statistics Korea [2]. To confirm the validity of individual vital statuses used in survival and prevalence calculation, the KNCI DB was linked to both mortality and population resident registration data, which were obtained from the Ministry of the Interior and Safety. For international comparisons of cancer incidence and mortality, data were downloaded from the Global Cancer Observatory: Cancer Today (gco.iarc.who.int/today) [1]. The analysis included all cancers, stomach cancer, colorectal cancer, and breast cancer, with real data used for Korea to ensure accurate comparisons. Additionally, for stomach, colorectal, and breast cancer, incidence and mortality rates were compared with major countries, including Japan, China, the United States, the United Kingdom, Germany, and Italy.

2. Cancer classification

All cancer cases had been registered in accordance with the International Classification of Diseases for Oncology, 3rd edition (ICD-O-3) [5]. The range of cancers to be registered and used for the national statistics calculation was limited to records with a behavior code of "/2 (carcinoma *in situ*)" or "/3 (malignant)," from the morphology (i.e., histology) codes of ICD-O-3, by which a patient was initially enrolled in the KNCI DB. Since 2021, neuroendocrine tumors (ICD-O-3: 8152 and 8240) of colorectal cancer and gastrointestinal stromal tumors (ICD-O-3: 8936) of stomach cancer have been classified as malignant cancers. Similar to previous reports, malignant cancer cases and their statistics were mainly assessed in this article. In addition, the supplementary incidence statistics for carcinoma *in situ* cases were also calculated separately.

For the convenience of classification and reporting, the

Table 1. Cancer incidence, deaths, and prevalence by sex in Korea, 2022

Site/Type	New cases			Deaths			Prevalent cases[a]		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
All sites	282,047	147,468	134,579	83,378	51,236	32,142	2,588,079	1,132,485	1,455,594
Lip, oral cavity, and pharynx	4,684	3,356	1,328	1,294	962	332	36,295	24,225	12,070
Esophagus	3,044	2,662	382	1,618	1,457	161	14,376	12,647	1,729
Stomach	29,487	19,562	9,925	7,147	4,620	2,527	356,507	234,071	122,436
Colon and rectum	33,158	19,633	13,525	9,087	5,216	3,871	326,251	192,195	134,056
Liver	14,913	10,974	3,939	10,212	7,423	2,789	83,824	62,502	21,322
Gallbladder[b]	7,848	4,284	3,564	5,217	2,764	2,453	29,610	15,492	14,118
Pancreas	9,780	5,085	4,695	7,325	3,813	3,512	20,571	10,337	10,234
Larynx	1,229	1,158	71	293	273	20	13,104	12,299	805
Lung	32,313	21,646	10,667	18,584	13,715	4,869	131,496	76,915	54,581
Breast	29,528	137	29,391	2,878	17	2,861	330,854	1,186	329,668
Cervix uteri	3,174	-	3,174	785	-	785	64,087	-	64,087
Corpus uteri	3,958	-	3,958	415	-	415	40,016	-	40,016
Ovary	3,263	-	3,263	1,349	-	1,349	29,502	-	29,502
Prostate	20,754	20,754	-	2,383	2,383	-	147,618	147,618	-
Testis	355	355	-	16	16	-	5,017	5,017	-
Kidney	6,963	4,817	2,146	1,025	718	307	64,516	43,709	20,807
Bladder	5,261	4,197	1064	1,602	1,203	399	46,303	37,763	8,540
Brain and CNS	2,163	1,172	991	1,474	811	663	14,665	7,546	7,119
Thyroid	33,914	8,576	25,338	404	142	262	554,693	107,779	446,914
Hodgkin lymphoma	378	235	143	63	38	25	4,182	2,597	1,585
Non-Hodgkin lymphoma	6,069	3,457	2,612	2,104	1,206	898	46,010	25,934	20,076
Multiple myeloma	1,961	1,077	884	1,061	555	506	9,633	5,105	4,528
Leukemia	3,869	2,259	1,610	2,034	1,193	841	31,202	17,427	13,775
Other and ill-defined	23,981	12,072	11,909	5,008	2,711	2,297	187,747	90,121	97,626

CNS, central nervous system. [a]Limited-duration prevalent cases on January 1, 2022. These are patients who were diagnosed between January 1, 1999 and December 31, 2022 and who were alive on January 1, 2023. Multiple primary cancer cases were counted multiple times, [b]Includes the gallbladder and other/unspecified parts of the biliary tract.

Table 2. Crude and age-standardized cancer incidence rates by sex in Korea, 2022

Site/Type	Crude incidence rate per 100,000			Age-standardized incidence rate per 100,000[a]		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	550.2	577.4	523.3	287.0	295.7	289.9
Lip, oral cavity, and pharynx	9.1	13.1	5.2	4.8	7.1	2.8
Esophagus	5.9	10.4	1.5	2.7	5.0	0.7
Stomach	57.5	76.6	38.6	26.8	37.6	17.2
Colon and rectum	64.7	76.9	52.6	31.8	40.1	24.2
Liver	29.1	43.0	15.3	13.4	21.4	6.0
Gallbladder[b]	15.3	16.8	13.9	6.0	7.6	4.8
Pancreas	19.1	19.9	18.3	8.4	9.6	7.4
Larynx	2.4	4.5	0.3	1.1	2.1	0.1
Lung	63.0	84.8	41.5	26.9	38.8	17.5
Breast	57.6	0.5	114.3	34.7	0.3	69.2
Cervix uteri	6.2	-	12.3	3.9	-	7.8
Corpus uteri	7.7	-	15.4	4.6	-	9.2
Ovary	6.4	-	12.7	3.8	-	7.7
Prostate	40.5	81.3	0.0	16.7	36.5	-
Testis	0.7	1.4	0.0	0.7	1.3	-
Kidney	13.6	18.9	8.3	7.4	10.6	4.3
Bladder	10.3	16.4	4.1	4.2	7.6	1.5
Brain and CNS	4.2	4.6	3.9	3.0	3.4	2.6
Thyroid	66.2	33.6	98.5	48.4	24.2	73.5
Hodgkin lymphoma	0.7	0.9	0.6	0.6	0.7	0.5
Non-Hodgkin lymphoma	11.8	13.5	10.2	6.5	7.8	5.4
Multiple myeloma	3.8	4.2	3.4	1.7	2.0	1.4
Leukemia	7.5	8.8	6.3	5.6	6.6	4.6
Other and ill-defined	46.8	47.3	46.3	23.3	25.5	21.4

CNS, central nervous system. [a]Age-adjusted using the Segi's world standard population, [b]Includes the gallbladder and other/unspecified parts of the biliary tract.

ICD-O-3 codes were converted to the classification of the International Classification of Diseases, 10th edition (ICD-10) [6]. Exceptionally, some hematopoietic diseases (myeloproliferative disorders/myelodysplastic syndromes) are not classified as malignant cancer in ICD-10 classification, therefore their ICD-O-3 codes were used without any conversion. For mortality data, causes of death were coded according to the ICD-10.

We adopted cancer classifications with 24 and 61 types; the former was a modified classification based on the GLOBOCAN cancer dictionary [7], and the latter was the taxonomy used in "Cancer Incidence in Five Continents" [8], and both of them were provided by the International Association of Cancer Registries. In this article, cancer classification with 24 types of cancer was used for description. The summary staging system developed under the Surveillance, Epidemiology, and End Results (SEER) program (i.e., SEER summary staging) [9] was used to categorize the extent of tumor invasion or metastasis.

3. Statistical analyses

Incidence, mortality, and prevalence rates were expressed as crude rates (CRs) or age-standardized rates (ASRs) per 100,000 people. The CR was defined as the total number of newly diagnosed (for incidence) or deceased (for mortality) cases in a year divided by the mid-year population. The ASR was defined as the weighted average of the age-specific rates in which the weights represent the proportions of people in the corresponding age groups in a standard population [10]. ASRs were standardized using Segi's world standard population [11]. The cumulative risk of developing cancer from birth to life expectancy during 2022 in Korea was also assessed, assuming no other cause of death (i.e., by simply calculating the sum of the age-specific cancer rates from birth to life expectancy), as follows [10]:

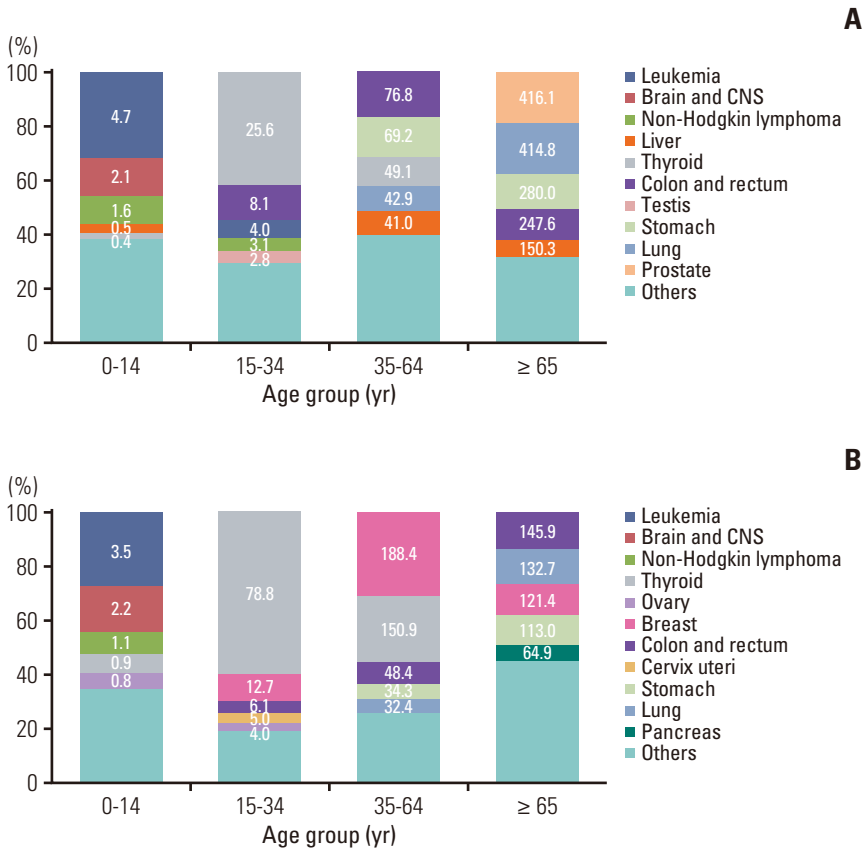


Fig. 1. The five common sites of cancer incidence by age group and sex in Korea, 2022. (A) Men. (B) Women. Numbers in the graph are age-specific incidence rates per 100,000. CNS, central nervous system.

$$\text{Cumulative risk of developing cancer from birth to life expectancy} = 100 \times \left(1 - e^{-\frac{\text{cumulative rate}}{100}}\right)$$

Trends in ASRs were estimated using Joinpoint regression, with a maximum number of two joinpoints. The results were summarized as annual percentage changes with the best model fit, based on a linear model for the natural log-transformed ASRs.

The survival rate of cancer patients, diagnosed between 1993 and 2022, was calculated based on the results of follow-up until December 31, 2023. The 5-year relative survival rate was defined as the ratio of observed survival of cancer patients to expected survival in the general population, adjusting the effects of other causes of death using the standard population life table provided by Statistics Korea [2]. Relative survival rates were estimated using the Ederer II method [12] with some minor corrections, based on an algorithm devised by Paul Dickman [13]. Trends in 5-year relative survival rates were evaluated as percent differences in survival rates between 1993-1995 and 2018-2022.

The mortality-to-incidence ratio (M/I ratio) was calculated as the number of cancer deaths in 2022 divided by the number of newly diagnosed cancer cases in the same year. The M/I ratio is a widely used indicator of cancer prognosis and the effectiveness of cancer control programs at the population level [14].

Prevalent cases were defined as the number of cancer patients alive on January 1, 2023, among all the patients diagnosed with cancer between 1999 and 2022. $p < 0.05$ was considered statistically significant. Joinpoint 5.0.2.0 (National Cancer Institute), and SAS ver. 9.4 (SAS Institute) were used for statistical analyses.

Results

1. Incidence

The number of new cancer diagnoses in 2022 decreased by 154 cases (0.05%) compared to 2021. In 2022, a total of 282,047 people were newly diagnosed with cancer in Korea, of which 52.3% (147,468 cases) were men and 47.7% (134,579 cases) were women (Table 1). The five most diagnosed cancers in

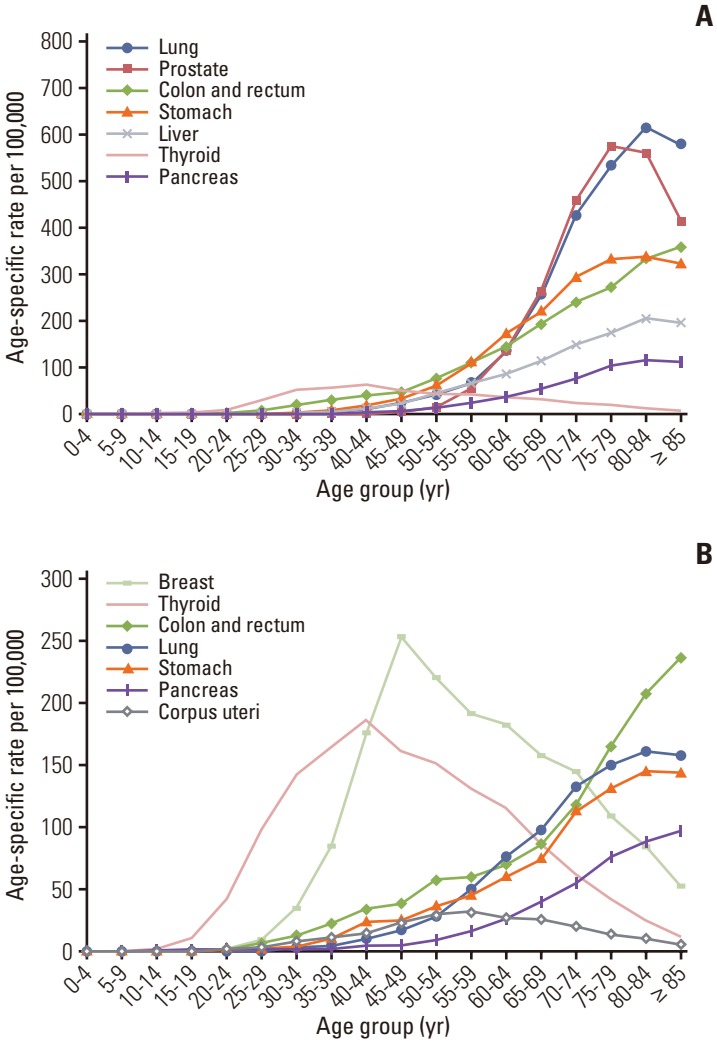


Fig. 2. Age-specific incidence rates of common cancers for 2022 in Korea. (A) Men. (B) Women.

Korea were thyroid, colorectal, lung, breast, and stomach cancers; in men, lung and prostate cancers were followed by colorectal, stomach, and liver cancers, whereas breast and thyroid cancers were followed by colorectal, lung, and stomach cancers in women. These top five cancers in each sex accounted for 62.8% and 65.9% of all cancer cases in men and women, respectively. Among the top ten cancers, the increase in new cancer diagnoses in 2022 compared to 2021 was the largest for prostate (9.2%), followed by pancreatic (6.4%), breast (1.2%), and lung cancer (0.3%). Thyroid cancer was the most frequent cancer from 2010 to 2014: its ranking fell after the debate on overdiagnosis in 2014, but recently rose again and regained the first rank since 2019. Table 2 provides the CRs and ASRs of cancer incidence in 2022. The CR and ASR of all cancer incidence were 550.2 per 100,000 (577.4 for men and 523.3 for women) and 287.0 per 100,000 (295.7 for men and 289.9 for women), respectively. The difference between CR and ASR implies that the majority of cancer patients in Korea belong to the elderly, as opposed to the world's standard population, which has a higher proportion of young people. The overall lifetime probability of being diagnosed with any cancer was 38.1%, under the condition that one survives to the age that matches the life expectancy of the Korean population. That probability was higher in men (37.7%) than in women (34.8%) (data not shown).

There were marked differences in age-specific incidence rates (Fig. 1). In the childhood population (0-14 years), leukemia, brain and central nervous system (CNS) cancer, and non-Hodgkin lymphoma were the top three cancers in both sexes, accounting for 29.6%, 14.8%, and 11.3% of all cancer cases diagnosed in this age group, respectively. Thyroid cancer was the most common cancer in both sexes among

Table 3. The top 10 leading causes of death in Korea, 2022

Rank	Cause of death	No. of deaths	Percentage of all deaths	Age-standardized death rate per 100,000[a)]
	All causes	372,921	100.0	273.3
1	Cancer	83,378	22.4	65.7
2	Heart disease	33,715	9.0	22.7
3	COVID-19	31,280	8.4	19.8
4	Pneumonia	26,710	7.2	16.0
5	Cerebrovascular disease	25,420	6.8	17.2
6	Intentional self-harm (suicide)	12,906	3.5	17.4
7	Alzheimers disease	11,624	3.1	6.4
8	Diabetes mellitus	11,178	3.0	7.6
9	Hypertensive diseases	7,717	2.1	4.4
10	Disease of liver	7,541	2.0	7.4
	Others	121,470	32.6	88.6

Source: Mortality Data, 2022, Statistics Korea [1]. COVID-19, coronavirus disease 2019. [a)]Age-adjusted using the Segi's world standard population.

Table 4. Crude and age-standardized cancer mortality rates by sex in Korea, 2022

Site/Type	Crude mortality rate per 100,000			Age-standardized mortality rate per 100,000[a)]		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	162.7	200.6	125.0	65.7	91.7	45.8
Lip, oral cavity, and pharynx	2.5	3.8	1.3	1.1	1.8	0.5
Esophagus	3.2	5.7	0.6	1.3	2.6	0.2
Stomach	13.9	18.1	9.8	5.7	8.4	3.5
Colon and rectum	17.7	20.4	15.1	6.9	9.4	4.9
Liver	19.9	29.1	10.8	8.4	13.8	3.6
Gallbladder[b)]	10.2	10.8	9.5	3.7	4.7	2.9
Pancreas	14.3	14.9	13.7	5.7	6.9	4.6
Larynx	0.6	1.1	0.1	0.2	0.5	0.0
Lung	36.3	53.7	18.9	13.6	23.3	6.1
Breast	5.6	0.1	11.1	2.9	0.0	5.6
Cervix uteri	1.5	-	3.1	0.7	-	1.4
Corpus uteri	0.8	-	1.6	0.4	-	0.7
Ovary	2.6	-	5.2	1.2	-	2.4
Prostate	4.6	9.3	-	1.5	3.8	-
Testis	0.0	0.1	-	0.0	0.1	-
Kidney	2.0	2.8	1.2	0.8	1.3	0.4
Bladder	3.1	4.7	1.6	1.0	2.0	0.4
Brain and CNS	2.9	3.2	2.6	1.7	2.0	1.4
Thyroid	0.8	0.6	1.0	0.3	0.2	0.3
Hodgkin lymphoma	0.1	0.1	0.1	0.1	0.1	0.0
Non-Hodgkin lymphoma	4.1	4.7	3.5	1.7	2.2	1.2
Multiple myeloma	2.1	2.2	2.0	0.8	1.0	0.7
Leukemia	4.0	4.7	3.3	2.0	2.5	1.5
Other and ill-defined	9.8	10.6	8.9	4.1	5.1	3.3

CNS, central nervous system. [a)]Age-adjusted using the world standard population, [b)]Includes the gallbladder and other/unspecified parts of the biliary tract.

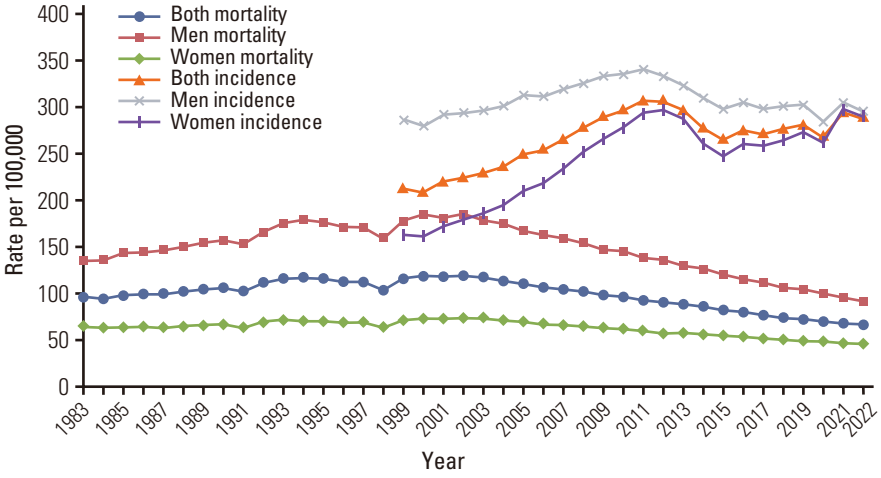


Fig. 3. Annual age-standardized cancer incidence and mortality rates by sex for all sites from 1983 to 2022 in Korea. Age standardization was based on Segi's world standard population.

the adolescent and young adult populations (15-34 years), accounting for 53.6% of all cancers diagnosed. The most common cancers in that age group, excluding thyroid cancer, were colorectal cancer and leukemia in men, and breast and colorectal cancer in women. In the 35-64-year age group, men were most commonly diagnosed with colorectal, stomach, thyroid, and lung cancers (collectively accounting for 51.3%), while breast and thyroid cancers were the most common in women (collectively accounting for 55.3%). For those aged 65 years and above, lung and prostate cancers were the most common in men, while colorectal and lung cancers were the most common in women. Most cancers have been shown to increase in incidence with age; the exceptions were thyroid cancer in both sexes and breast cancer in women, which showed the highest incidence in those in their 30-40s and 40-50s age groups, respectively (Fig. 2).

2. Mortality

Since the causes-of-death statistics were published in 1983, cancer has been the number one cause of death in Korea. As of 2022, a total of 83,378 people (61.5% men and 38.5% women) died of cancer, accounting for 22.4% of all deaths in Korea (Tables 1 and 3). The overall CR for cancer deaths was 162.7 per 100,000, and the rate was approximately 1.6 times higher for men than for women (Table 4). Lung cancer was the leading cause of cancer death in both sexes (CR, 53.7 per 100,000 in men and 18.9 per 100,000 in women), followed by liver and colorectal cancers in men, and colorectal and pancreatic cancers in women. When stratified according to the age at the time of death, the most common causes of cancer mortality in both sexes were as follows: leukemia in their 10s and 20s, breast cancer in their 30s, liver cancer in their 40s and 50s, and lung cancer among those 60 years old or older (data not shown).

3. Trends in cancer incidence and mortality

Changes in cancer incidence rates from 1999 to 2022 and mortality rates from 1983 to 2022 are depicted in Fig. 3. Compared to 1999, cancer incidence rates increased by about 35.3% and mortality rates decreased about 42.9%, in 2022 (Table 5). The overall cancer incidence rates increased by approximately 3.3% per year until 2012, demonstrated nonsignificant changes until 2015, and increased thereafter with an annual decrease of 1.2% until 2022. Notably, after a temporary decline in 2020, likely attributable to healthcare disruptions caused by the coronavirus disease 2019 (COVID-19) pandemic, incidence rates rebounded sharply in 2021 as healthcare services recovered [15,16]. The impact of COVID-19 was not limited to Korea; globally, disruptions in healthcare services led to delays in cancer diagnosis and treatment [17-19]. In contrast, cancer mortality rates demonstrated nonsignificant changes until 2002 and decreased thereafter with an annual decrease of 2.8% until 2013, and a further decrease of 3.2% per year until 2022. These trends were observed similarly in both men and women, although the slopes of change were much more pronounced in women for incidence, and in men for mortality rates (S1 and S2 Tables).

Since 1999, breast, pancreas, kidney, and hematologic (leukemia and lymphoma) cancers, and those of some male or female reproductive organs (ovary, corpus uteri, prostate, and testis) have been continuously increasing. In both sexes combined, breast (especially for women) and kidney cancers displayed initial rapid increases and then lessened

Table 5. Trends in cancer incidence and mortality rates from 1999 to 2022 in Korea, both sexes

Site/Type	Incidence								Mortality							
	1999	2022	Trend 1		Trend 2		Trend 3		1999	2022	Trend 1		Trend 2		Trend 3	
			Years	APC	Years	APC	Years	APC			Years	APC	Years	APC	Years	APC
All sites	212.1	287.0	1999-2012	3.3[a]	2012-2015	–5.3	2015-2022	1.2[a]	115.1	65.7	1999-2002	0.9	2002-2013	–2.8[a]	2013-2022	–3.2[a]
Lip, oral cavity, and pharynx	3.6	4.8	1999-2022	0.9[a]	-	-	-	-	1.1	1.1	1999-2022	–1.8[a]	-	-	-	-
Esophagus	4.1	2.7	1999-2016	–2.2[a]	2016-2022	–0.4	-	-	3.1	1.3	1999-2018	–4.4[a]	2018-2022	–1.1	-	-
Stomach	43.7	26.8	1999-2011	–0.3	2011-2022	–4.3[a]	-	-	23.9	5.7	1999-2003	–3.2[a]	2003-2022	–6.8[a]	-	-
Colon and rectum	20.6	31.8	1999-2010	5.9[a]	2010-2018	–4.0[a]	2018-2022	2.7	7.8	6.9	1999-2003	6.2[a]	2003-2011	–0.3	2011-2022	–3.3[a]
Liver	27.9	13.4	1999-2010	–1.7[a]	2010-2022	–4.3[a]	-	-	20.6	8.4	1999-2002	0.7	2002-2014	–3.7[a]	2014-2022	–5.7[a]
Gallbladder[b]	6.5	6.0	1999-2004	1.4	2004-2018	–0.3	2018-2022	–2.5[a]	5.2	3.7	1999-2001	7.4	2001-2013	–2.7[a]	2013-2022	–1.2[a]
Pancreas	5.6	8.4	1999-2017	1.5[a]	2017-2022	2.8[a]	-	-	5.5	5.7	1999-2022	0.1	-	-	-	-
Larynx	2.4	1.1	1999-2022	–3.4[a]	-	-	-	-	1.6	0.2	1999-2005	–8.1[a]	2005-2008	–15.7[a]	2008-2022	–7.0[a]
Lung	28.5	26.9	1999-2022	–0.2[a]	-	-	-	-	22.5	13.6	1999-2001	3.8	2001-2014	–2.0[a]	2014-2022	–3.9[a]
Breast	11.0	34.7	1999-2007	6.4[a]	2007-2022	4.4[a]	-	-	2.3	2.9	1999-2004	3.0[a]	2004-2022	0.7[a]	-	-
Cervix uteri	8.6	3.9	1999-2007	–4.6[a]	2007-2022	–3.0[a]	-	-	1.4	0.7	1999-2003	10.1[a]	2003-2008	–7.1[a]	2008-2022	–4.1[a]
Corpus uteri	1.4	4.6	1999-2022	5.2[a]	-	-	-	-	0.1	0.4	1999-2003	35.8[a]	2003-2022	2.4[a]	-	-
Ovary	2.7	3.8	1999-2022	1.9[a]	-	-	-	-	0.9	1.2	1999-2022	0.5[a]	-	-	-	-
Prostate	3.1	16.7	1999-2009	14.8[a]	2009-2015	1.3	2015-2022	4.9[a]	0.9	1.5	1999-2002	15.1[a]	2002-2010	1.8[a]	2010-2022	–0.9[a]
Testis	0.3	0.7	1999-2022	4.6[a]	-	-	-	-	0.0	0.0	1999-2022	–2.3[a]	-	-	-	-
Kidney	3.0	7.4	1999-2008	6.6[a]	2008-2022	2.7[a]	-	-	1.1	0.8	1999-2015	–0.1	2015-2022	–3.8[a]	-	-
Bladder	4.7	4.2	1999-2004	1.8	2004-2022	–1.0[a]	-	-	1.3	1.0	1999-2001	11.1	2001-2022	–2.0[a]	-	-
Brain and CNS	2.9	3.0	1999-2022	0.2	-	-	-	-	1.9	1.7	1999-2003	4.1[a]	2003-2008	–4.3[a]	2008-2022	–0.8[a]
Thyroid	6.5	48.4	1999-2011	22.4[a]	2011-2016	–12.2[a]	2016-2022	5.6[a]	0.4	0.3	1999-2003	6.9[a]	2003-2022	–4.3[a]	-	-
Hodgkin lymphoma	0.3	0.6	1999-2022	3.4[a]	-	-	-	-	0.0	0.1	1999-2004	24.9[a]	2004-2022	–2.7[a]	-	-
Non-Hodgkin lymphoma	4.3	6.5	1999-2002	0.2	2002-2018	2.5[a]	2018-2022	0.8	2.1	1.7	1999-2022	–1.2[a]	-	-	-	-
Multiple myeloma	1.0	1.7	1999-2013	3.6[a]	2013-2022	0.4	-	-	0.6	0.8	1999-2003	12.7[a]	2003-2015	0.9	2015-2022	–3.4[a]
Leukemia	4.8	5.6	1999-2022	0.9[a]	-	-	-	-	2.9	2.0	1999-2022	–1.8[a]	-	-	-	-
Other and ill-defined	14.9	23.3	1999-2009	2.8[a]	2009-2022	1.9[a]	-	-	7.8	4.1	1999-2022	–2.6[a]	-	-	-	-

APC was calculated using age-standardized incidence data based on the Segi's world standard population. APC, annual percentage change; CNS, central nervous system. [a]Significantly different from zero ($p < 0.05$), [b]Includes the gallbladder and other/unspecified parts of the biliary tract.

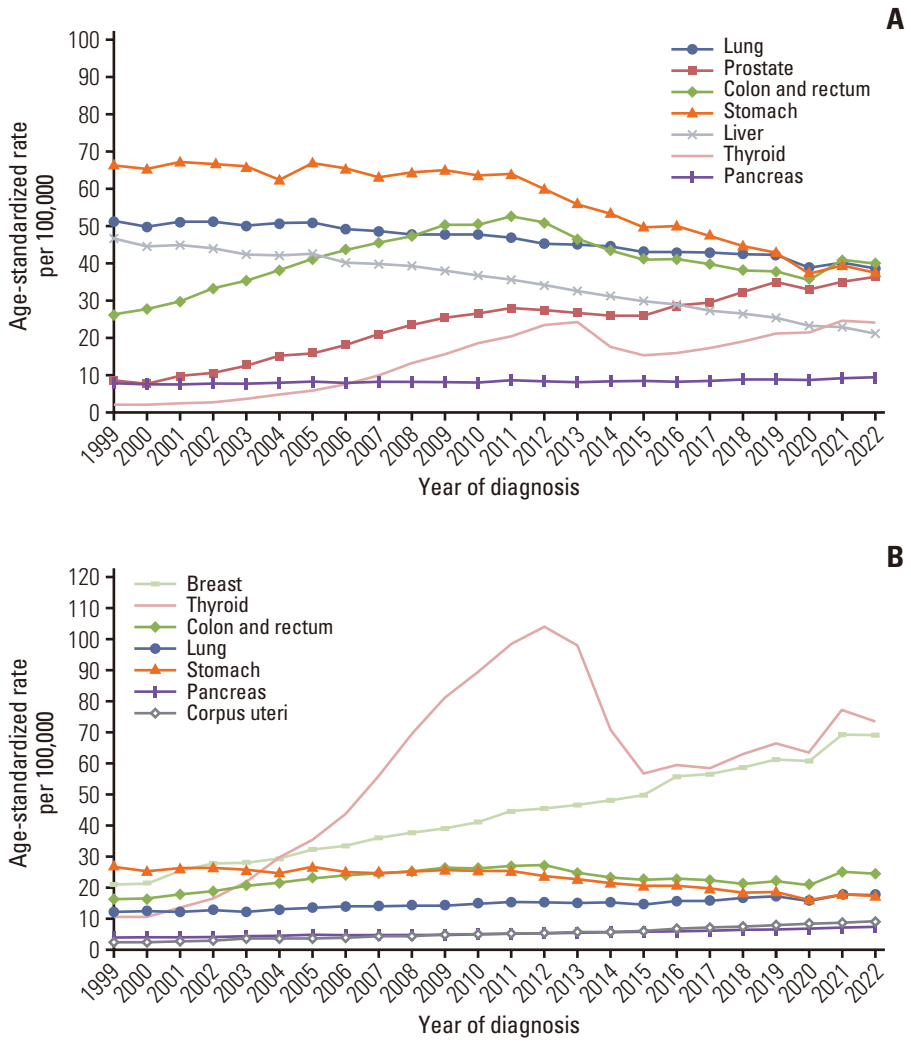


Fig. 4. Trends in age-standardized incidences of selected cancers by sex from 1999 to 2022 in Korea. (A) Men. (B) Women. Age standardization was based on Segi's world standard population.

increases after 2007 and 2008, respectively. Prostate cancer demonstrated a distinguished increase until 2009, followed by a nonsignificant trend until 2015, and regained an increasing trend thereafter. The remaining cancers with increasing trend revealed steady increases throughout the entire period. On the other hand, the incidences of colorectal and bladder cancers demonstrated increasing trends that have recently reversed significantly, with decreases starting in 2010 and 2004, respectively. In contrast, stomach and liver cancers demonstrated initial moderate decreasing trends until 2011 and 2010, respectively, followed by more rapid decreases thereafter; cervical cancer showed a marked decrease until 2007, however, it showed a lessened decrease thereafter until now. Lastly, the incidence of thyroid cancer increased significantly between 1999 and 2011, decreased significantly between 2011 and 2016, and increased again from 2016 (Table 5). These trends were observed similarly in both men and women, except for breast cancer in men and lung cancer in women which revealed partially different results of trends from those described above. In men, decreasing trend of stomach, lung, and liver cancer throughout the period while prostate and kidney cancer had an increasing trend. In women, stomach, liver, and cervical cancer had a decreasing trend while breast and lung cancer revealed an increasing trend. The characteristic trend of colorectal and thyroid cancer which changed rapidly in a short period, was more pronounced in women than in men (Fig. 4, S1 and S2 Tables).

The ASRs for mortality in most cancers have shown decreasing trends in Korea. Stomach cancer revealed continuous decreasing trends throughout the entire observed peri-

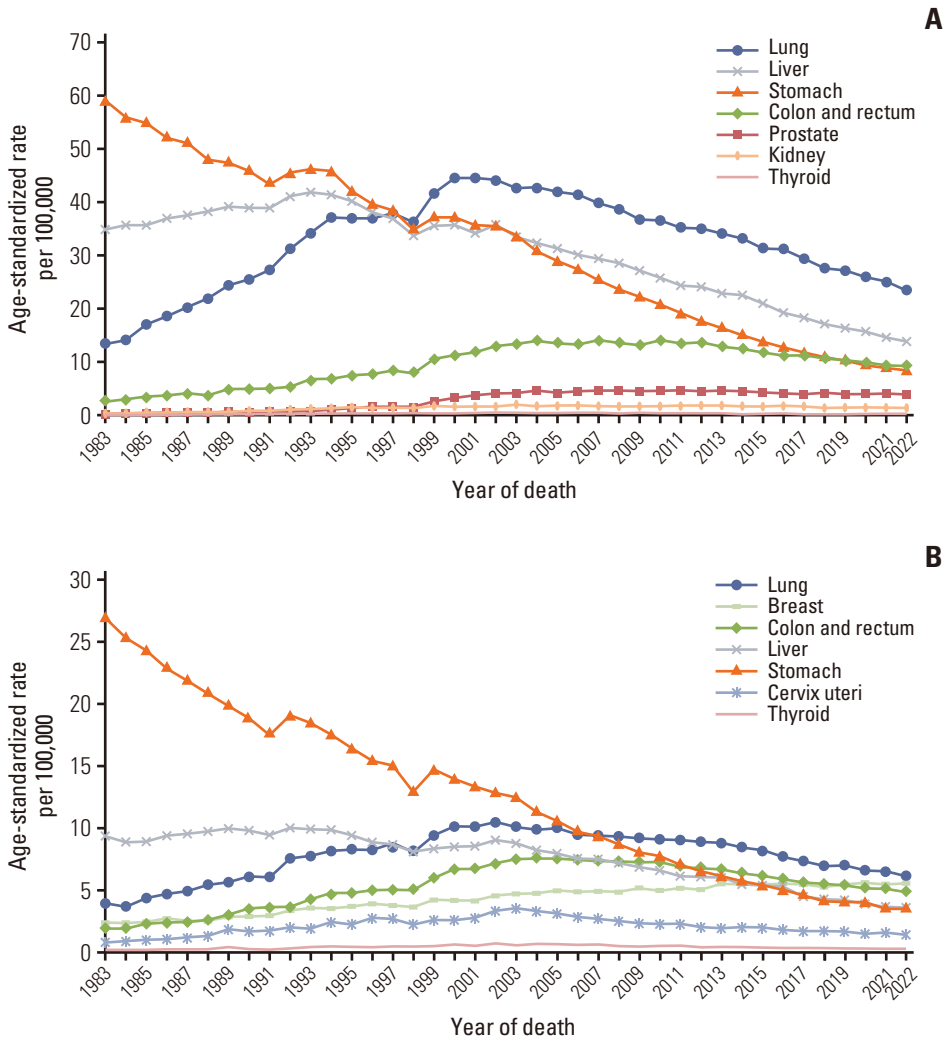


Fig. 5. Trends in age-standardized mortalities of selected cancers by sex from 1983 to 2022 in Korea. (A) Men. (B) Women. Age standardization was based on Segi's world standard population. *Cancers of cervix uteri, corpus uteri, and unspecified parts of the uterus were combined (C53-C55), due to their unclear classifications in the past.

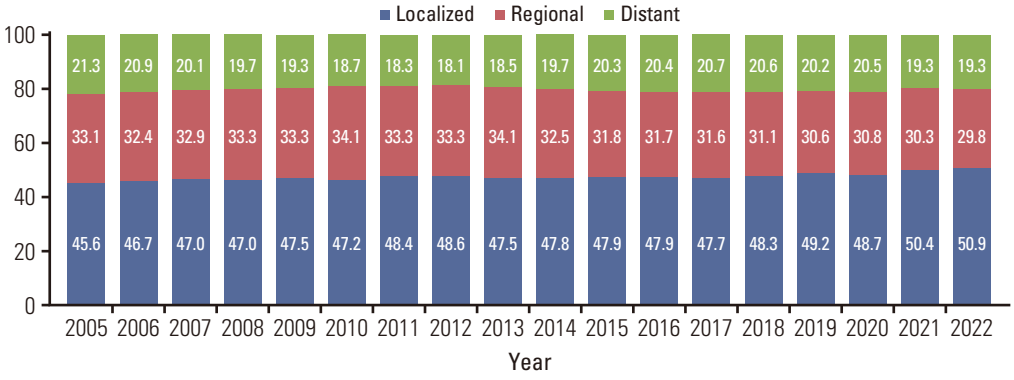


Fig. 6. Distributions of stage at diagnosis from 2005 to 2022. Stage at diagnosis has been collected since 2005. The proportions for each stage were calculated after excluding unknown stage cases.

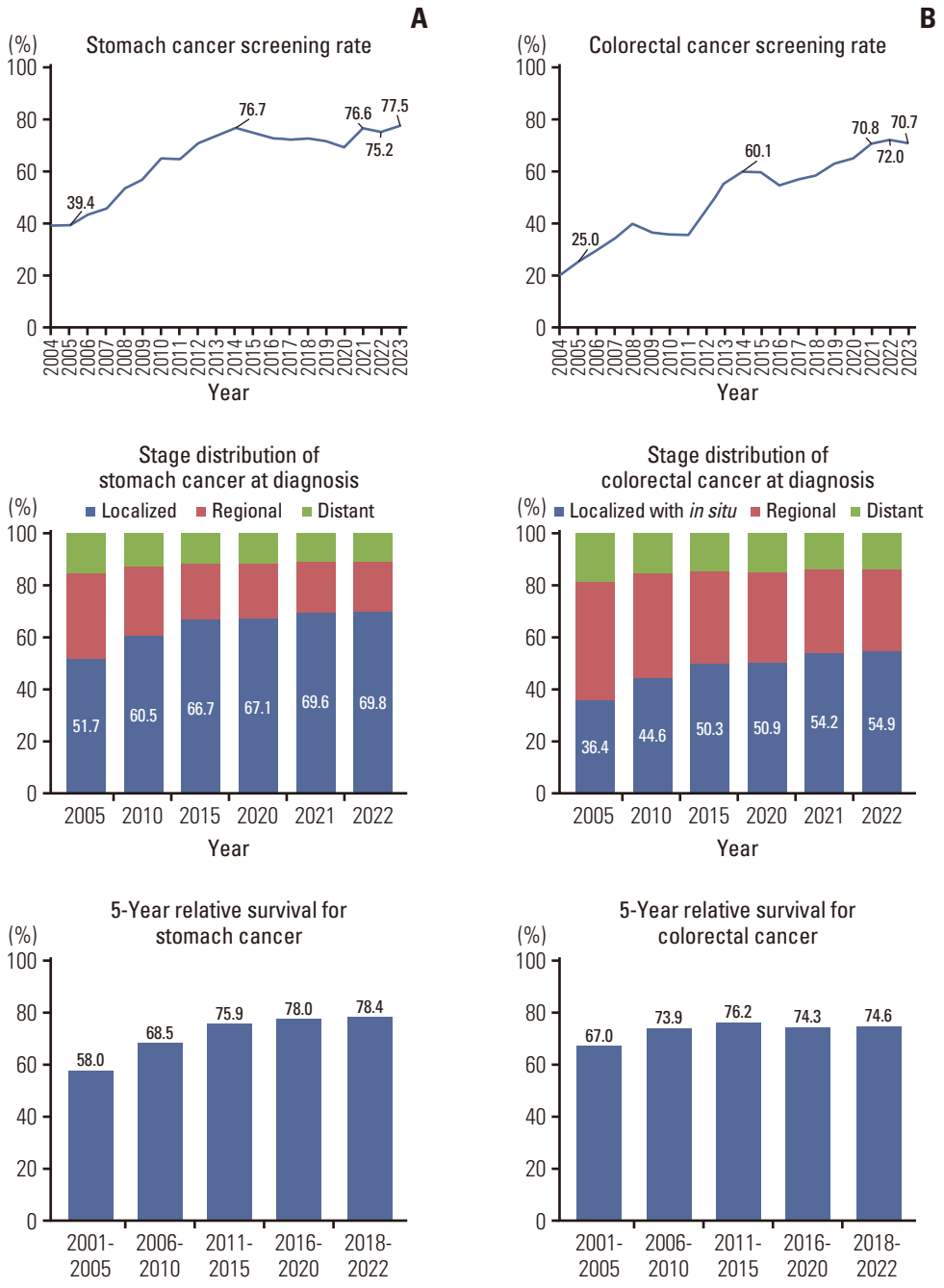


Fig. 7. Trends in screening rate, stage at diagnosis, and survival rate for stomach, colorectal, and breast cancer. (A) Stomach cancer. (B) Colorectal cancer. *(Continued to the next page)*

od for mortality, with more pronounced decreasing slopes in more recent periods. Liver and lung cancer mortality rates began to decrease in 2002 and 2001, respectively, followed by further rapid decreases starting in 2014, both. On the other hand, the mortality rates of colorectal, cervical, and thyroid cancers initially increased significantly until 2003; since then, the mortality rate from these cancers significantly decreased (Table 5). These trends were observed similarly in both sexes. However, breast cancer in women displayed significantly increasing mortality trends throughout the entire observed period, with less increasing trend after 2005 (Fig. 5, S1 and S2 Tables).

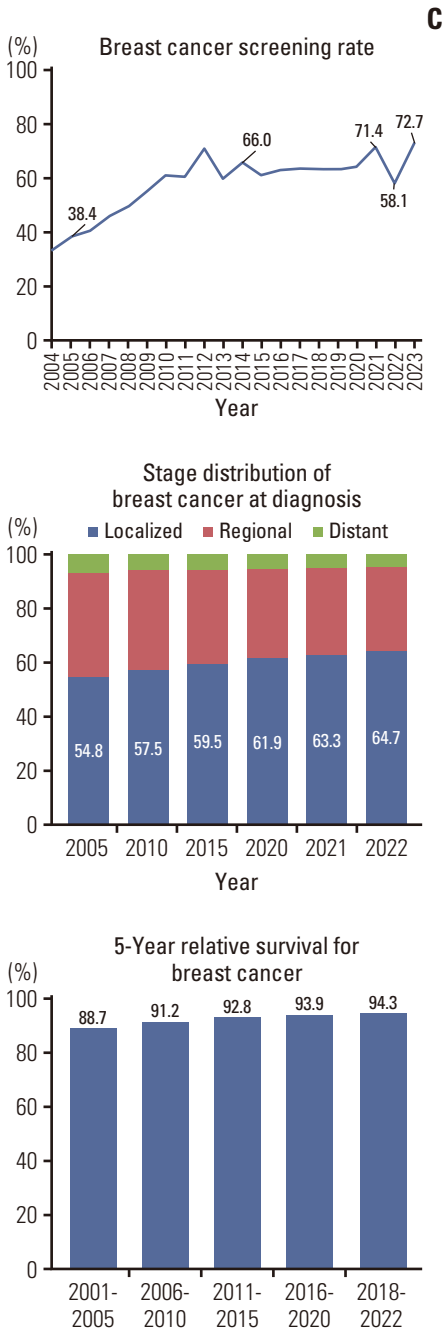


Fig. 7. *(Continued from the previous page)* (C) Breast cancer. Stage at diagnosis has been collected since 2005. The proportions for each stage were calculated after excluding unknown stage cases. For colorectal cancer, localized stage includes *in situ* cases. Screening rate data were obtained from the 2023 Cancer Screening Behavior Survey. Stomach cancer screening includes upper gastrointestinal series and endoscopy. Colorectal cancer screening includes fecal occult blood tests and colonoscopy. Breast cancer screening includes mammography and breast ultrasound.

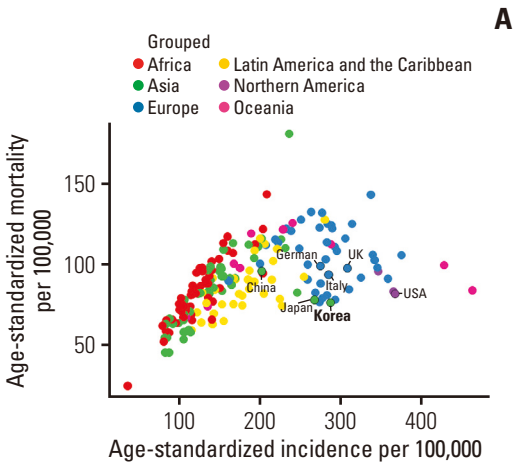


Fig. 8. International comparison of incidence and mortality for all cancers, stomach cancer, colorectal cancer, and breast cancer. (A) All cancers. *(Continued to the next page)*

4. Trends in stage at diagnosis

In terms of distribution of stage at diagnosis across all cancers, the proportion of localized stage increased from 45.6% in 2005, when stage at diagnosis data collection began, to 50.9% in 2022, reflecting a 5.3 percentage point rise. In contrast, the proportion of distant metastasis cases decreased by 2.0 percentage points over the same period. However, the proportion of distant metastasis cases has remained relatively stable at around 20% throughout the years (Fig. 6).

Among the cancers included in the National Cancer Screening Program, the trends in screening rate, stage at diagnosis, and 5-year relative survival were analyzed for stomach, colorectal, and breast cancer. The screening rate for stomach cancer increased from 39.4% in 2005 to 77.5% in 2023, nearly doubling over this period. Correspondingly, the proportion of localized stomach cancer at diagnosis rose from 51.7% in 2005 to 69.8% in 2022, reflecting an 18.1 percentage point increase. Additionally, the 5-year relative survival rate for stomach cancer during 2018–2022 reached 78.4%, marking a 20.4 percentage point improvement compared to the 58.0% survival rate observed in patients diagnosed between 2001 and 2005 (Fig. 7A).

Similarly, the screening rate for colorectal cancer increased from 25.0% in 2005 to 70.7% in 2023, approximately 2.8 times higher. Consequently, the proportion of colorectal cancer cases diagnosed at the localized or *in situ* stage increased from 36.4% in 2005 to 54.9% in 2022, reflecting an 18.5 percentage point rise. The 5-year relative survival rate for colorectal cancer during 2018-2022 was 74.6%, showing a 7.6 percentage point increase compared to the 67.0% survival rate for those diagnosed between 2001 and 2005 (Fig. 7B).

For breast cancer, the screening rate rose from 38.4% in 2005

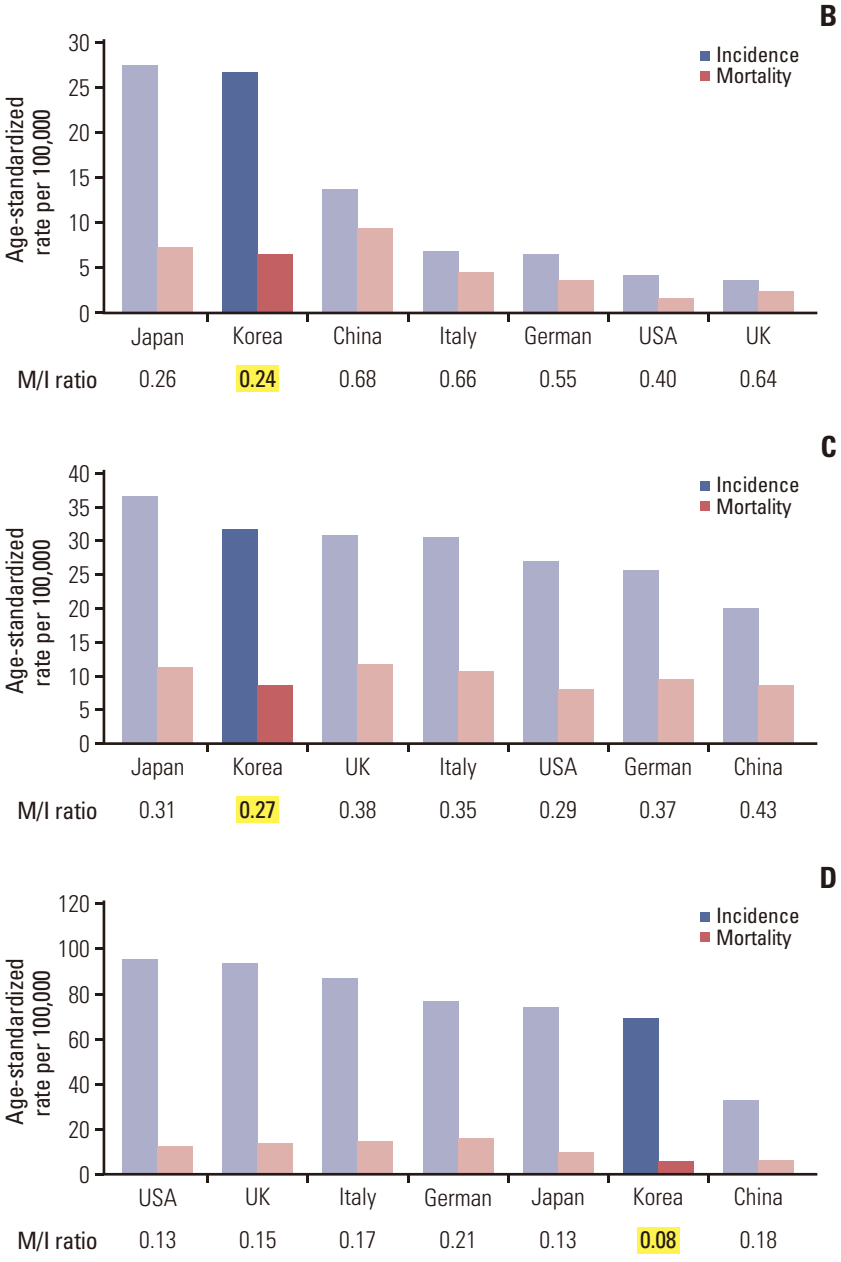


Fig. 8. *(Continued from the previous page)* (B) Stomach cancer. (C) Colorectal cancer. (D) Breast cancer. M/I rate, mortality-to-incidence rate. Data were downloaded from the GLOBOCAN 2022 website (https://gco.iarc.fr/today/en/dataviz/scatter-plot?mode=population), with real data used for Korea to ensure accurate comparisons.

to 72.7% in 2023, nearly doubling. In parallel, the proportion of localized breast cancer at diagnosis increased from 54.8% in 2005 to 64.7% in 2022, an improvement of 9.9 percentage points. The 5-year relative survival rate for breast cancer during 2018–2022 reached 94.3%, representing a 7.6 percentage point increase from the 88.7% survival rate among patients diagnosed between 2001 and 2005 (Fig. 7C).

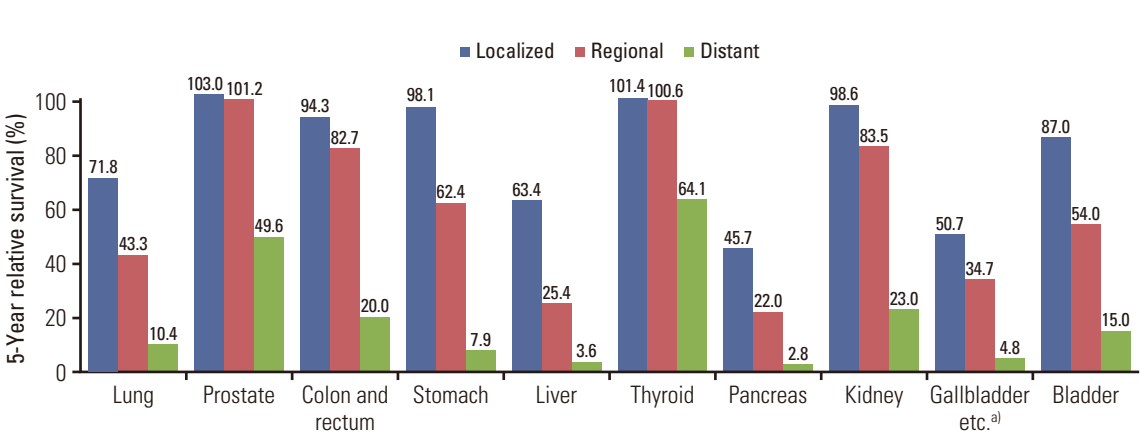
5. International comparison of incidence and mortality

In the international comparison of cancer incidence and mortality for all cancers, the overall cancer incidence in Korea was 287.0 per 100,000 population, which was higher than Japan (267.1), Germany (274.2), and Italy (284.5), but lower than the United Kingdom (307.8) and the United States (367.0), showing a relatively high incidence rate comparable to developed countries. However, Korea recorded the low-

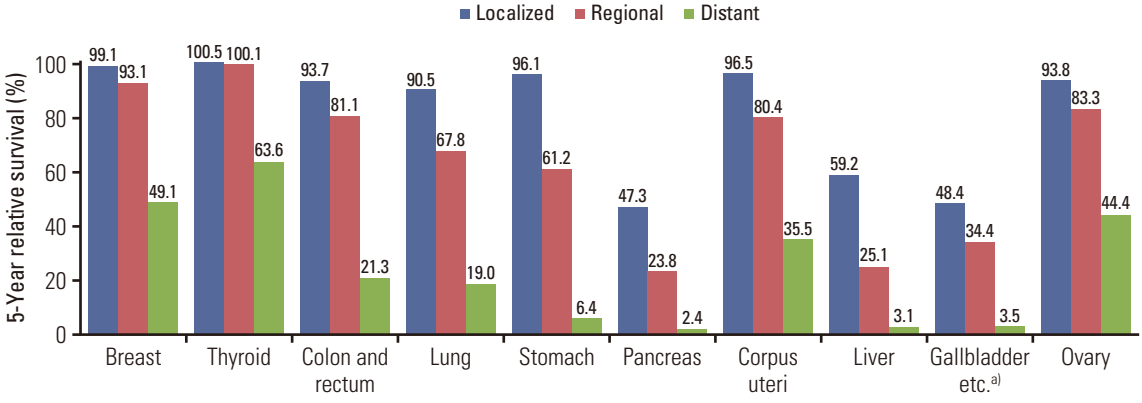
Table 6. Trends in the 5-year relative survival rates (%) by sex and year of diagnosis from 1993 to 2022 in Korea

Site/Type	Both sexes								Men								Women							
	1993-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2018-2022	Change[a]	1993-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2018-2022	Change[a]	1993-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2018-2022	Change[a]
All sites	42.9	45.2	54.2	65.5	70.8	71.7	72.9	30.0	33.2	36.4	45.6	56.9	63.2	65.7	67.2	34.0	55.2	56.4	64.3	74.5	78.4	77.9	78.8	23.6
All sites excluding thyroid	41.3	43.4	50.9	59.1	64.3	67.5	68.7	27.4	32.8	35.9	44.8	54.7	60.4	63.6	64.9	32.1	52.6	53.6	59.1	65.0	69.4	72.4	73.3	20.7
Lip, oral cavity, and pharynx	42.3	47.4	54.7	61.2	65.6	69.5	70.3	28.0	36.8	41.8	49.9	57.1	62.0	66.7	67.3	30.5	59.5	64.5	68.1	72.1	74.6	76.5	77.6	18.1
Esophagus	13.9	15.7	21.7	30.2	36.8	42.5	43.2	29.3	13.0	14.7	20.9	29.5	36.4	42.1	42.6	29.6	25.4	25.8	29.8	37.1	40.3	46.5	48.8	23.5
Stomach	43.9	47.3	58.0	68.5	75.9	78.0	78.4	34.5	44.0	47.6	58.7	69.2	76.8	78.9	79.0	35.0	43.7	46.8	56.6	67.1	74.1	76.3	77.0	33.3
Colon and rectum	56.2	58.9	67.0	73.9	76.2	74.3	74.6	18.4	56.7	59.9	68.8	75.9	77.8	75.5	75.6	19.0	55.7	57.7	64.5	71.1	73.6	72.5	73.2	17.5
Liver	11.8	14.2	20.6	28.4	34.6	38.9	39.4	27.6	10.9	13.9	20.4	28.4	35.1	39.3	40.1	29.2	15.0	15.1	21.0	28.4	33.1	37.4	37.4	22.4
Gallbladder[b]	18.6	20.7	23.1	27.0	28.9	28.8	29.4	10.8	18.0	21.1	23.5	27.9	29.7	29.9	30.7	12.7	19.3	20.3	22.7	26.1	28.1	27.7	28.0	8.7
Pancreas	10.7	8.8	8.5	8.6	11.1	15.1	16.5	5.8	10.1	8.4	8.5	8.4	10.5	14.1	15.4	5.3	11.6	9.3	8.5	8.9	11.8	16.2	17.7	6.1
Larynx	61.6	63.3	66.5	73.1	75.4	80.1	80.4	18.8	62.2	63.7	67.1	73.5	75.8	80.2	80.2	18.1	56.6	59.0	59.2	67.8	69.5	79.7	83.4	26.9
Lung	12.5	13.7	16.6	20.3	27.7	37.5	40.6	28.1	11.6	12.4	15.4	18.0	23.5	31.1	33.7	22.1	15.8	17.5	20.2	26.0	37.5	51.0	54.8	39.0
Breast	79.3	83.7	88.7	91.2	92.8	93.9	94.3	15.1	77.1	83.8	88.0	90.2	90.5	90.2	91.0	13.9	79.3	83.7	88.7	91.2	92.8	94.0	94.3	15.1
Cervix uteri	78.3	80.3	81.5	80.7	80.4	80.4	79.9	1.5	-	-	-	-	-	-	-	-	78.3	80.3	81.5	80.7	80.4	80.4	79.9	1.5
Corpus uteri	83.2	82.1	84.3	86.5	87.8	89.2	89.0	5.9	-	-	-	-	-	-	-	-	83.2	82.1	84.3	86.5	87.8	89.2	89.0	5.9
Ovary	60.2	59.5	61.9	61.4	65.0	65.2	65.8	5.7	-	-	-	-	-	-	-	-	60.2	59.5	61.9	61.4	65.0	65.2	65.8	5.7
Prostate	59.2	69.3	81.0	91.9	94.2	95.5	96.4	37.2	59.2	69.3	81.0	91.9	94.2	95.5	96.4	37.2	-	-	-	-	-	-	-	-
Testis	87.9	90.5	90.7	93.4	95.0	96.1	96.5	8.6	87.9	90.5	90.7	93.4	95.0	96.1	96.5	8.6	-	-	-	-	-	-	-	-
Kidney	64.3	66.9	73.6	78.5	82.4	85.8	87.3	23.0	63.6	65.2	73.0	78.3	81.9	85.9	87.4	23.8	65.8	70.4	75.0	78.9	83.4	85.5	87.0	21.2
Bladder	70.7	73.6	76.0	77.2	76.6	77.1	77.8	7.2	71.5	75.1	77.7	79.2	78.6	78.9	79.5	8.0	67.3	67.2	68.9	68.9	68.6	69.7	71.2	3.9
Brain and CNS	40.5	40.1	41.2	43.0	42.1	40.7	40.2	–0.3	39.0	38.8	40.6	41.5	40.7	38.7	38.5	–0.5	42.4	41.6	42.0	44.7	43.8	43.0	42.1	–0.3
Thyroid	94.5	95.1	98.3	99.9	100.2	100	100.1	5.5	87.8	89.7	95.8	100.0	100.5	100.2	100.4	12.6	95.7	96.0	98.7	99.9	100.1	99.9	100.0	4.3
Hodgkin lymphoma	70.2	72.1	76.9	81.3	82.3	87.2	86.2	16.0	69.4	69.5	75.1	81.0	81.6	87.3	86.7	17.3	71.5	77.3	80.5	81.7	83.5	86.8	85.3	13.8
Non-Hodgkin lymphoma	48.2	50.9	56.0	59.3	62.9	65.4	65.7	17.4	46.8	49.4	54.9	59.2	62.9	66.0	66.3	19.5	50.6	53.2	57.6	59.6	62.9	64.6	64.8	14.2
Multiple myeloma	23.7	21.1	29.8	35.1	41.7	50.4	51.3	27.6	23.4	19.2	30.0	35.5	41.2	50.6	52.2	28.8	24.1	23.3	29.7	34.8	42.3	50.1	50.3	26.2
Leukemia	28.1	34.7	42.2	48.1	52.2	55.0	55.2	27.1	27.8	33.8	42.2	47.2	52.4	54.6	54.8	26.9	28.4	35.9	42.3	49.1	51.9	55.6	55.7	27.3
Other and ill-defined	44.6	48.4	57.9	67.7	72.9	76.4	77.0	32.4	39.6	44.7	54.1	63.8	69.4	73.5	74.1	34.5	50.2	52.6	62.1	71.7	76.4	79.3	79.9	29.6

CNS, central nervous system. [a]Absolute percentage change in 5-year relative survival from 1993 to 1995 and 2018 to 2022, [b]Includes the gallbladder and other/unspecified parts of the biliary tract.



Stage distribution at diagnosis (%)	Lung	Prostate	Colon and rectum	Stomach	Liver	Thyroid	Pancreas	Kidney	Gallbladder etc.[a]	Bladder
Localized	22.0	52.3	38.4	65.0	45.7	37.9	12.5	73.2	24.6	72.6
Regional	27.3	25.6	40.0	19.3	25.5	54.4	31.2	11.8	45.4	10.7
Distant	43.5	9.7	16.0	11.0	15.6	1.1	46.4	10.8	20.2	4.2



Stage distribution at diagnosis (%)	Breast	Thyroid	Colon and rectum	Lung	Stomach	Pancreas	Corpus uteri	Liver	Gallbladder etc.[a]	Ovary
Localized	60.4	47.7	36.3	33.5	64.8	15.2	72.1	45.2	24.2	28.8
Regional	31.8	44.9	40.4	22.6	18.5	31.4	16.7	21.9	40.2	18.0
Distant	4.6	0.7	16.8	37.2	10.4	41.2	7.1	16.8	23.6	47.5

Fig. 9. Five-year relative survival rates by stage at diagnosis and stage distribution of selected cancers by sex in Korea, 2018-2022. (A) Men. (B) Women. Staging according to the Surveillance, Epidemiology, and End Results stage categories. The stage distribution was calculated including cases with unknown stage, but the unknown stage category was not shown in the figure (So the total does not sum to 100%).
[a]Includes the gallbladder and other/unspecified parts of the biliary tract.

est cancer mortality rate among the major comparison countries, at 77.0 per 100,000 population, this was lower than the rates in Japan (78.6), Germany (99.7), Italy (94.2), the United Kingdom (98.3), and the United States (82.3), as well as other European countries (Fig. 8A).

Next, the incidence and mortality rates of stomach, colorectal, and breast cancer were compared across major countries. The incidence rate of stomach cancer in Korea was the second highest after Japan. However, Korea had the lowest M/I ratio (0.24) among the comparison countries (Fig. 8B). Similarly, the incidence rate of colorectal cancer in Korea was also the second highest after Japan, but the M/I ratio was the lowest at 0.27 (Fig. 8C).

For breast cancer, Korea's incidence rate was lower than that of the United States, the United Kingdom, Italy, Germany, and Japan, but higher than that of China. The M/I ratio

Table 7. Crude and age-standardized rates of cancer prevalence by sex on January 1, 2023 in Korea

Site/Type	Crude prevalence rate per 100,000[a]			Age-standardized prevalence rate per 100,000[b]		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	5,049.0	4,434.2	5,659.6	2,554.1	2,235.8	2,954.0
Lip, oral cavity, and pharynx	70.8	94.9	46.9	36.5	49.8	24.5
Esophagus	28.0	49.5	6.7	11.9	22.6	2.9
Stomach	695.5	916.5	476.1	302.8	429.3	197.0
Colon and rectum	636.5	752.5	521.2	279.6	360.7	211.9
Liver	163.5	244.7	82.9	76.8	121.4	36.0
Gallbladder[c]	57.8	60.7	54.9	23.3	27.6	19.8
Pancreas	40.1	40.5	39.8	19.5	20.3	19.1
Larynx	25.6	48.2	3.1	10.6	21.8	1.3
Lung	256.5	301.2	212.2	110.7	138.6	89.4
Breast	645.5	4.6	1,281.8	347.5	2.2	685.7
Cervix uteri	125.0	-	249.2	66.2	-	130.3
Corpus uteri	78.1	-	155.6	41.9	-	82.8
Ovary	57.6	-	114.7	34.1	-	68.0
Prostate	288.0	578.0	-	107.1	246.3	-
Testis	9.8	19.6	-	8.5	16.7	-
Kidney	125.9	171.1	80.9	64.5	91.3	39.7
Bladder	90.3	147.9	33.2	36.1	66.7	11.8
Brain and CNS	28.6	29.5	27.7	22.8	24.2	21.2
Thyroid	1,082.1	422.0	1,737.7	647.1	261.2	1,032.2
Hodgkin lymphoma	8.2	10.2	6.2	6.4	7.6	5.2
Non-Hodgkin lymphoma	89.8	101.5	78.1	53.8	63.8	44.3
Multiple myeloma	18.8	20.0	17.6	8.4	9.7	7.4
Leukemia	60.9	68.2	53.6	51.5	57.8	45.1
Other and ill-defined	366.3	352.9	379.6	186.6	196.2	178.7

CNS, central nervous system. [a]Crude prevalence rate: number of prevalent cases divided by the corresponding person-years of observation. Prevalent cases were defined as patients who were diagnosed between January 1, 1999 and December 31, 2022 and who were alive on January 1, 2023. Multiple primary cancer cases were counted multiple times, [b]Age-adjusted using the Segi's world standard population, [c]Includes the gallbladder and other/unspecified parts of the biliary tract.

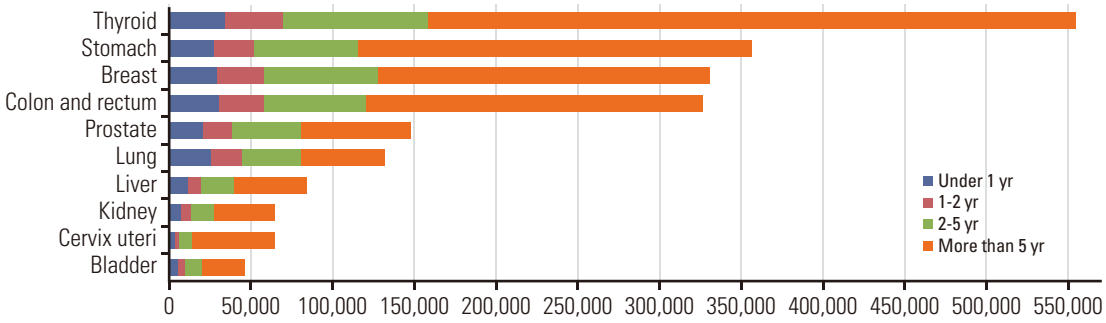
for breast cancer in Korea was 0.08, the lowest among the comparison countries (Fig. 8D).

6. Survival rates

Over the past two decades, when cancer survival statistics have been compiled, the relative survival rates of cancer patients have increased significantly and steadily. The 5-year relative survival rates for all patients diagnosed with cancer in the recent 5 years, from 2018 to 2022 were 72.9% in both sexes; 67.2% in men and 78.8% in women (Table 6). The temporal increasing trends in survival rates, from 42.9% in 1993-1995 to 72.9% in 2018-2022, were maintained even after excluding thyroid cancer (from 41.3% in 1993-1995 to 68.7% in 2018-2022), which has an excellent prognosis with a 5-year relative survival rate of 100%.

After thyroid cancer, survival rates were the highest for testis and prostate cancers in men (96.5% and 96.4%, respectively) and breast cancer in women (94.3%). On the contrary, the survival rates were the lowest for cancers of the pancreas (16.5%), and gallbladder plus other and unspecified parts of the biliary tract (29.4%) in both sexes. Prostate cancer (men), lung cancer (women), stomach cancer (both sexes), and lip, oral cavity, and pharynx (men) were associated with outstanding improvements in survival rates over the observed period. In contrast, brain and CNS cancer showed a decline in both sexes.

In terms of stage distribution at diagnosis and recent survival rates according to the SEER summary stage in each cancer, Fig. 9 shows the top 10 most common cancers for each sex in 2022. In men, kidney, bladder and stomach cancers revealed the highest proportions of patients who were diagnosed at the localized stage (73.2%, 72.6%, and 65.0%,



Time since diagnosis	Thyroid	Stomach	Colon and rectum	Breast	Prostate	Lung	Liver	Cervix uteri	Kidney	Bladder	All cancers
Under 1 yr	33,774	26,961	29,180	30,302	20,310	25,155	11,004	6,640	3,044	4,824	252,655
1-2 yr	35,306	24,409	28,390	27,800	17,792	18,541	8,487	6,267	2,874	4,292	224,203
2-5 yr	88,366	63,652	69,859	61,580	42,394	36,500	19,593	14,691	7,972	10,260	524,208
More than 5 yr	397,247	241,485	203,425	206,569	67,122	51,300	44,740	36,918	50,197	26,927	1,587,013
Total	554,693	356,507	330,854	326,251	147,618	131,496	83,824	64,516	64,087	46,303	2,588,079

Fig. 10. Prevalent cases of common cancers by time since cancer diagnosis. Prevalent cases were defined as the number of cancer patients alive on January 1, 2023 among all cancer patients diagnosed between 1999 and 2022.

respectively), accompanied by the 5-year survival rates of 98.6%, 87.0%, and 98.1%, respectively. In contrast, pancreatic and lung cancers demonstrated the highest proportions of patients diagnosed at the distant metastatic stage, which approximated to 45%, with corresponding 5-year survival rates of 2.8% and 43.3%, respectively. In women, 72.1%, 64.8%, and 60.4% of uterine corpus, stomach, and breast cancers, respectively, were diagnosed at the localized stage, with 5-year survival rates of 96.5%, 96.1%, and 99.1%, respectively. However, more than 40% of pancreatic and ovarian cancers were diagnosed at the distant metastatic stage, with 5-year survival rates of 2.4% and 44.4%, respectively.

7. Prevalence rates

The total prevalent cancer cases in 2022 (identified as survivor at the time of January 1, 2023) were 2,588,079, surpassing 2 million since 2018 (Table 1). It suggested that one in 20 people (5.0% of the entire Korean population; 4.4% of men and 5.7% of women) has a history of being diagnosed with cancer. Of these, 1,302,668 (50.3% of all prevalent cases) were aged ≥ 65 years, indicating that one in seven people in that age group (17.7% of, or one in six, men and 12.0% of, or one in nine, women) would have experienced cancer (data not shown).

Table 7 provides the CRs and ASRs of prevalence for all cancers combined and for specific cancers. In total, the cancer prevalence rate for 2022 in Korea was 5,049.0 per 100,000 people. Thyroid cancer had the highest prevalence (CR, 1,082.1 per 100,000; 422.0 per 100,000 for men and 1,737.7 per 100,000 for women), followed by stomach cancer (CR, 695.5 per 100,000) and breast cancer (CR, 645.5 per 100,000). Following this, Colorectal cancer in men and breast cancer in women revealed the highest prevalence rates (CR, 752.5 and 1,281.8 per 100,000, respectively).

The number of prevalent cases for common cancers, according to the time since cancer diagnosis, are described in Fig. 10. In total, 1,587,013 (61.3% of all prevalent cases) had survived > 5 years after cancer diagnosis, majority of them being survivors of thyroid, stomach, breast, and colorectal cancers. Another 524,208 (20.3% of all prevalent cases) have been alive 2-5 years after their cancer diagnosis, in which period they need regular follow-up; and the rest were 476,858 (18.4% of all prevalent cases) for whom it had been < 2 years since their cancer diagnosis, in which period they still need active cancer treatment.

8. Carcinoma *in situ* incidence

A summary of carcinoma *in situ* cases in 2022 is provided as a Supplementary Material (S3 Table, S4 Fig.).

Conclusion

In 2022, cancer incidence returned to pre–COVID-19 trends, reflecting the recovery of healthcare utilization, including cancer screening. While the number of new cancer

diagnoses has steadily increased since 2015, age-standardized incidence rates have remained relatively stable. Over the past decade, cancer incidence trends have varied by type, with stomach, liver, cervical, and lung cancer rates declining, while prostate and breast cancer rates continue to rise. Thyroid cancer, which had decreased since 2012, has shown an upward trend since 2015, while colorectal cancer incidence declined after 2010 but has risen again since 2018. The 5-year relative survival rate has reached 72.9%, demonstrating continuous improvement. Since 2018, the number of cancer survivors has exceeded 2 million, with 61.3% surviving more than 5 years. In 2022, Korea recorded the lowest M/I ratio among major comparison countries, highlighting the effectiveness of its National Cancer Control Program.

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Electronic Supplementary Material

Supplementary materials are available at Cancer Research and Treatment website (https://www.e-crt.org).

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Conflicts of Interest

Conflict of interest relevant to this article was not reported.

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