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Comparative study of cancer profiles between 2020 and 2022 using global cancer statistics (GLOBOCAN)

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ABSTRACT

Background: The International Agency for Research on Cancer (IARC) released the latest estimates of the global burden of cancer. We present a comparison of cancer profiles between 2020 and 2022, leveraging data from the Global Cancer Statistics (GLOBOCAN).

Methods: Cancer incidence and mortality data were sourced from two different years, 2020 and 2022, in the GLOBOCAN database. We tracked changes in age-standardized incidence and mortality rates, as well as estimated numbers of new cancer cases and deaths of the 15 most common cancer types globally and in China between 2020 and 2022. Additionally, we conducted comparisons to assess alterations in the cancer burden and variations in mortality-to-incidence ratio (MIR) across different regions and countries for both 2020 and 2022.

Results: Lung cancer remained the most common cancer and the leading cause of cancer death worldwide. The new cases of thyroid cancer witnessed a sharp increase in 2022. Conversely, the numbers of new cancer cases and deaths from stomach and esophageal cancer decreased significantly in 2022. The geographic distribution of cancer incidence and mortality across six continents in 2022 largely mirrored that of 2020. Higher Human Development Index (HDI) levels in countries corresponded with elevated rates of cancer incidence and mortality, consistent with the previous year. Among 185 countries or territories, China's age-standardized incidence rate (ASIR) ranked 64th and its age-standardized mortality rate (ASMR) ranked 68th, aligning with global averages. Lung cancer continued to impose the greatest burden of incidence and mortality. Stomach, breast, and esophageal cancers showed declines in both case counts and ASIR. Noteworthy reductions in both ASMR and absolute mortality numbers were observed in liver, stomach, and esophageal cancers. The global MIR decreased from 0.516 in 2020 to 0.488 in 2022. MIR trends indicated an upward trajectory with decreasing HDI levels in both 2022 and 2020. While Canada, Germany, India, Italy, Japan, and the United Kingdom demonstrated increasing MIRs, China exhibited the most significant decrease, followed by Russia and the United States.

Conclusions: The global landscape of cancer incidence and mortality in 2022 reflects ongoing trends observed in 2020. Cancer burdens vary notably across countries with differing socioeconomic statuses. Decreases in stomach, liver, and esophageal cancer cases and deaths signify progress in cancer control efforts. The decrease in the global MIRs highlights potential improvements in cancer management.

1. Introduction

Cancer remains one of the most significant public health challenges globally, with its incidence and mortality rates continuing to exert a substantial burden on healthcare systems and populations.[1,2] According to the International Agency for Research on Cancer (IARC), global cancer incidence rose from an estimated 14.1 million new cases in 2012 to approximately 20.0 million in 2022.[3]

Disparities in cancer burden persist across different countries. According to recent data, in high-income countries such as the United States and Canada, the incidence rates for certain cancers, such as breast cancer and thyroid cancer, have shown an increase in recent years, attributed in part to better access to screening or healthcare services.[4,5] Conversely, in low- and middle-income countries, common cancer types frequently exhibit a notable etiological link to infectious agents, exemplified by cervical and liver cancers. Those countries typically face

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higher cancer mortality rates, partially attributed to limited access to prevention, early detection, and treatment services.[6,7] Moreover, variations in cancer mortality to incidence ratios (MIRs) are evident across Human Development Index (HDI) categories. Global Cancer Statistics (GLOBOCAN) 2020 revealed that MIR is about 2-fold higher in low HDI countries versus very high HDI countries in both men (0.75 vs. 0.36) and women (0.69 vs. 0.30).[2]

Understanding the dynamic nature of cancer epidemiology is crucial for informing effective prevention, early detection, and treatment strategies. In this study, we present an examination of cancer profiles between 2020 and 2022, leveraging data from the GLOBOCAN database. Our primary objective is to compare cancer incidence, mortality, and global rankings across various types of cancers between the two specified years. Additionally, we aim to elaborate differences in cancer burden and compare MIRs among countries with varying HDI levels, providing insights into disparities in cancer outcomes and healthcare access. By elucidating temporal variations in cancer epidemiology, our study seeks to contribute to the ongoing efforts to address the multifaceted challenges posed by cancer on a global scale.

2. Materials and methods

2.1. Data sources

We obtained data on estimated numbers of cases and deaths, crude rates, and age-standardized rates of cancer incidence and mortality for 2020 and 2022 from the GLOBOCAN 2020 and GLOBOCAN 2022 databases, respectively. These databases, published by the IARC, offer a comprehensive view of global cancer statistics. Utilizing various regional aggregation perspectives, including global, continental, HDI categories, and the top 10 world's economies, we extracted information on estimates of the cancer incidence and mortality on 36 specific cancer sites. The GLOBOCAN project, hosted on the open-access platform CANCER TODAY,[3] serves as the primary source for these databases, accessible at https://gco.iarc.fr/today. CANCER TODAY features user-friendly data visualization tools tailored for exploring the global cancer burden, focusing on the latest estimates for the year 2022. This platform provides detailed insights into the cancer incidence and mortality across 185 countries and territories.

2.2. Data analysis

Initially, we analyzed the 15 most common cancer types based on estimated incidence and mortality figures for 2020 globally and in China. We tracked changes in rankings, age-standardized rates, and estimated numbers of these major cancer types between 2020 and 2022. Subsequently, we compared alterations in cancer incidence and mortality across different regions for the years 2020 and 2022. These comparisons spanned global, continental, and HDI classifications, as well as the top 10 economies. The continents considered were Asia, Europe, Africa, Northern America, Latin America and the Caribbean, and Oceania. The top 10 economies, ranked accordingly, comprised the United States, China, Japan, Germany, India, the United Kingdom, France, Russia, Canada, and Italy. HDI groupings were derived from the Human Development Reports (https://hdr.undp.org), delineated as follows: low (<0.550), medium (0.550–0.699), high (0.700–0.799), and very high (≥0.800).[8] Lastly, to gain initial insights into reporting quality and survival rates, we visualized changes in MIRs across various HDI levels and the top 10 economies for both 2020 and 2022. All analyses were conducted using R version 4.2.3.

3. Results

3.1. Rank changes of leading cancer types worldwide

Fig. 1 illustrates the incidence and mortality rates for different cancers in both 2020 and 2022. In 2022, lung cancer surpassed breast cancer as the most common malignancy globally, registering an increase of 273,904 cases in comparison to the year 2020. Cancers of colorectum, prostate, stomach, and liver ranked third to sixth in terms of incidence. The age-standardized incidence rate (ASIR) of thyroid cancer increased from 6.6 per 100,000 in 2020 to 9.1 per 100,000 in 2022, encompassing a cumulative increase of 235,012 cases. Breast, prostate, cervical, and bladder cancers exhibited a noteworthy increase in numbers of incidence, while new cases of stomach, liver, and esophageal cancers experienced a significant decline. Concerning cancer-related deaths, cancers of lung, colorectum, and liver remained the predominant causes in 2022. The numbers of deaths from stomach and esophageal cancers decreased significantly in comparison to the year 2020, with reductions amounting to 108,618 and 98,685, respectively. The number of cancer deaths attributable to lung cancer and prostate cancer increased by 21,325 and 22,126, respectively. The age-standardized mortality rate (ASMR) for the top 15 cancer types displayed diverse magnitudes of decline.

3.2. Incidence and mortality by continents, HDI, and world's economies

Table 1 and 2 provide an overview of the global distribution of the 19.98 million new cancer cases and 9.74 million cancer-related deaths in 2022, respectively, alongside comparative data from 2020. Asia accounted for approximately one half (49.2%) of the new cancer cases and the majority (56.1%) of global cancer deaths, with Europe following closely with 22.4% of incidence and 20.4% of mortality. North America contributed 13.4% to total cancer incidence and 7.2% to cancer deaths. The distribution of cancer incidence and mortality across the six continents in 2022 remained largely consistent with that observed in 2020. Both the incidence and mortality rates of cancer in Europe and Oceania surpassed the global average. Additionally, countries with higher levels of HDI demonstrated correspondingly higher cancer incidence and mortality rates both in crude and age-standardized terms, mirroring trends observed in the previous year.

In 2022, there were notable trends for the cancer burden within the top 10 global economies. Specifically, Japan, Germany, and the United Kingdom witnessed a decline in both the numbers of new cancer cases and the incidence rates compared to 2020. The United States, China, and Russia observed a decrease in the numbers of cancer deaths and mortality rates relative to 2020. Owing to its considerable population size, China contributed 24.2% to total cancer cases and 26.4% to cancer deaths in 2022. Among 185 countries or territories, China's ASIR ranked 64th, and ASMR ranked 68th, remaining in alignment with global averages. Except for India (98.5 per 100,000), the ASIR of the other eight countries all surpassed that of China. In terms of ASMR, Germany, the United Kingdom, France, and Russia exhibited higher rates compared to China.

3.3. Comparison of MIRs between 2022 and 2020

Table 3 reveals that, the MIRs exhibited an upward trend with decreasing HDI levels in both 2022 and 2020, with the lowest MIR recorded in very high HDI countries at 0.392 in 2022 and 0.389 in 2020. Among the top 10 world's economies, the United States demonstrated the lowest MIRs in both 2022 and 2020, with values of 0.255 and 0.268, respectively, followed by Canada (0.344 and 0.316), France (0.394 and 0.397), and the United Kingdom (0.399 and 0.392). Conversely, India displayed the highest MIRs, recording values of 0.649 and 0.643 in 2022 and 2020, respectively.

Comparing the MIRs between 2022 and 2020 revealed a global decrease of 0.029 (0.488 in 2022 vs. 0.516 in 2020). While very high HDI countries experienced an increased MIR in 2022 (0.392) relative to 2020 (0.389), other countries with different HDI demonstrated a consistent decreasing trend, with the most significant decrease observed among high HDI countries (0.537 in 2022 and 0.613 in 2020). However,

Table 1
Comparison of estimated cancer incidences worldwide, by HDI, and among the top 10 world economies between 2020 and 2022.

Region	New cases, n (%)		Crude incidence rates (per 100,000)		Rank*	Age-standardized incidence rates (per 100,000)		Rank*
	2020	2022	2020	2022		2020	2022	
Worldwide	19,292,789 (100.0)	19,976,499 (100.0)	247.5	253.4	–	201.0	196.9	–
Six continents								
Asia	9,503,710 (49.3)	9,826,539 (49.2)	204.8	211.4	–	169.1	164.4	–
Europe	4,398,443 (22.8)	4,471,422 (22.4)	587.4	598.2	–	285.2	280.0	–
Africa	1,109,209 (5.8)	1,185,216 (5.9)	82.7	84.3	–	132.1	132.3	–
Northern America	2,556,862 (13.3)	2,673,174 (13.4)	693.2	716.1	–	360.7	364.7	–
Latin America and the Caribbean	1,470,274 (7.5)	1,551,060 (7.8)	224.8	233.1	–	186.5	186.0	–
Oceania	254,291 (1.3)	269,088 (1.3)	595.8	615.0	–	404.6	409.0	–
HDI								
Very high HDI	8,934,818 (46.3)	9,296,171 (46.6)	571.2	566.3	–	295.3	285.7	–
High HDI	7,371,321 (38.2)	7,436,122 (37.2)	253.4	269.5	–	190.5	187.5	–
Medium HDI	2,326,749 (12.1)	2,424,245 (12.1)	100.0	106.8	–	108.5	112.3	–
Low HDI	650,423 (3.4)	812,211 (4.1)	65.7	67.1	–	115.7	110.6	–
Top 10 world's economies								
United States	2,281,658 (11.8)	2,380,189 (11.9)	689.3	710.9	11 (+1)	362.2	367.0	4 (+0)
China	4,568,754 (23.7)	4,824,703 (24.2)	315.6	341.8	55 (+2)	204.8	201.6	64 (+1)
Japan	1,028,658 (5.3)	1,005,157 (5.0)	813.3	800.4	3 (-2)	285.1	267.1	35 (-8)
Germany	628,519 (3.3)	605,805 (3.0)	750.2	722.2	10 (-6)	313.2	274.2	31 (-16)
India	1,324,413 (6.9)	1,413,316 (7.1)	96.0	100.5	120 (+1)	97.1	98.5	170 (+2)
United Kingdom	457,960 (2.4)	454,954 (2.3)	674.6	664.2	20 (-5)	319.9	307.8	14 (-2)
France	467,965 (2.4)	483,568 (2.4)	716.9	737.3	7 (+2)	341.9	339.0	9 (+0)
Russia	591,371 (3.1)	635,560 (3.2)	405.2	435.9	47 (+1)	234.3	248.1	41 (+7)
Canada	274,364 (1.4)	292,098 (1.5)	726.9	760.9	6 (+1)	348.0	345.9	6 (+2)
Italy	415,269 (2.2)	436,242 (2.2)	686.8	723.9	9 (+4)	292.6	284.5	22 (-1)

* The "rank" denotes the position of the country's incidence rate among 185 countries and regions in 2022, with the parentheses indicating the change in position compared to the year 2020. "-" in the "rank" column indicates not applicable. HDI, Human Development Index.

Table 2
Comparison of estimated cancer mortalities worldwide, by HDI, and among the top 10 world economies between 2020 and 2022.

Region	Deaths, n (%)		Crude mortality rates (per 100,000)		Rank*	Age-standardized mortality rates (per 100,000)		Rank*
	2020	2022	2020	2022		2020	2022	
Worldwide	9,958,133 (100.0)	9,743,832 (100.0)	127.8	123.6	–	100.7	91.7	–
Six continents								
Asia	5,809,431 (58.3)	5,464,451 (56.1)	125.2	117.6	–	101.6	88.0	–
Europe	1,955,231 (19.6)	1,986,093 (20.4)	261.1	265.7	–	108.7	106.3	–
Africa	711,429 (7.1)	763,843 (7.8)	53.1	54.3	–	88.8	88.9	–
Northern America	699,274 (7.0)	706,427 (7.2)	189.6	189.2	–	87.1	83.9	–
Latin America and the Caribbean	713,414 (7.3)	749,242 (7.7)	109.1	112.6	–	86.5	85.5	–
Oceania	69,354 (0.7)	73,776 (0.8)	162.5	168.6	–	93.2	93.4	–
HDI								
Very high HDI	3,478,767 (35.0)	3,643,502 (37.4)	222.4	222.0	–	98.7	96.0	–
High HDI	4,521,833 (45.4)	3,991,272 (41.0)	155.4	144.6	–	113.7	94.5	–
Medium HDI	1,513,219 (15.2)	1,560,054 (16.0)	65.0	68.7	–	71.5	73.1	–
Low HDI	439,852 (4.4)	544,600 (5.6)	44.4	45.0	–	82.7	77.3	–
Top 10 world's economies								
United States	612,390 (6.2)	605,761 (6.2)	185.0	180.9	54 (+0)	86.3	82.3	118 (-12)
China	3,002,899 (30.2)	2,574,176 (26.4)	207.5	182.3	53 (-11)	129.4	96.5	68 (-55)
Japan	420,124 (4.2)	426,278 (4.4)	332.2	339.4	2 (+1)	81.5	78.6	129 (-5)
Germany	252,065 (2.5)	253,170 (2.6)	300.9	301.8	12 (-2)	102.3	99.7	56 (+5)
India	851,678 (8.6)	916,827 (9.4)	61.7	65.2	120 (+2)	63.1	64.4	166 (+12)
United Kingdom	179,648 (1.8)	181,807 (1.9)	264.6	265.4	20 (+2)	100.5	98.3	63 (+1)
France	185,621 (1.9)	190,612 (2.0)	284.4	290.6	15 (+2)	107.9	106.7	44 (−2)
Russia	312,122 (3.1)	311,729 (3.2)	213.9	213.8	42 (-3)	113.7	110.5	37 (−5)
Canada	86,684 (0.9)	100,465 (1.0)	229.7	261.7	22 (+11)	93.5	96.4	70 (+12)
Italy	174,759 (1.8)	193,706 (2.0)	289.0	321.4	6 (+9)	91.1	94.2	74 (+12)

* The "rank" denotes the position of the country's mortality rate among 185 countries and regions in 2022, with the parentheses indicating the change in position compared to the year 2020. "–" in the "rank" column indicates not applicable. HDI, Human Development Index.

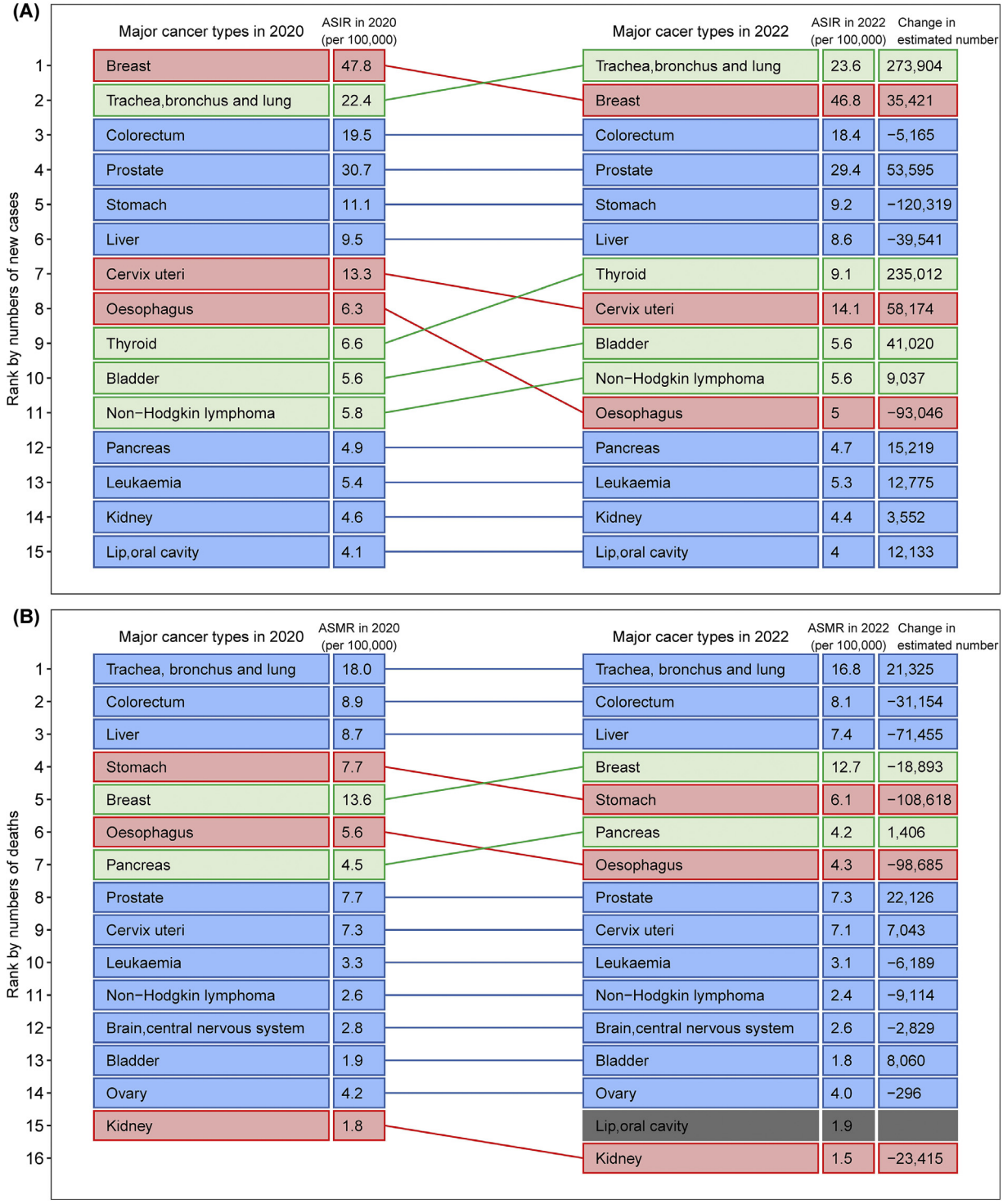

Fig. 1. A comparison of the rankings, ASIR, ASMR, and numbers of new cases and deaths of the most common cancer (A) and leading cancer death (B) worldwide between 2020 and 2022. Blue represents no rank change, red represents a rank decrease, and green represents a rank increase. ASIR, age-standardized incidence rate; ASMR, age-standardized mortality rate.

the trends of MIRs varied across different countries. Canada, Germany, India, Italy, Japan, and the United Kingdom exhibited an increasing MIR, with Canada showing the highest increase at 0.028, followed by Italy (0.023) and Germany (0.017). Conversely, the remaining countries displayed a decreasing MIR, with China experiencing the most substantial decrease (0.125), followed by Russia (0.037) and the United States (0.013).

3.4. China's rank changes of leading cancer types

As shown in Fig. 2, lung cancer and colorectal cancer remained the top two cancer types in 2022, with an increase in the ASIR of lung cancer from 34.8 per 100,000 in 2020 to 40.8 per 100,000 in 2022. Thyroid cancer ascended to the third, evincing a doubling of its ASIR and a consequential augmentation of 245,025 cases in 2022 compared

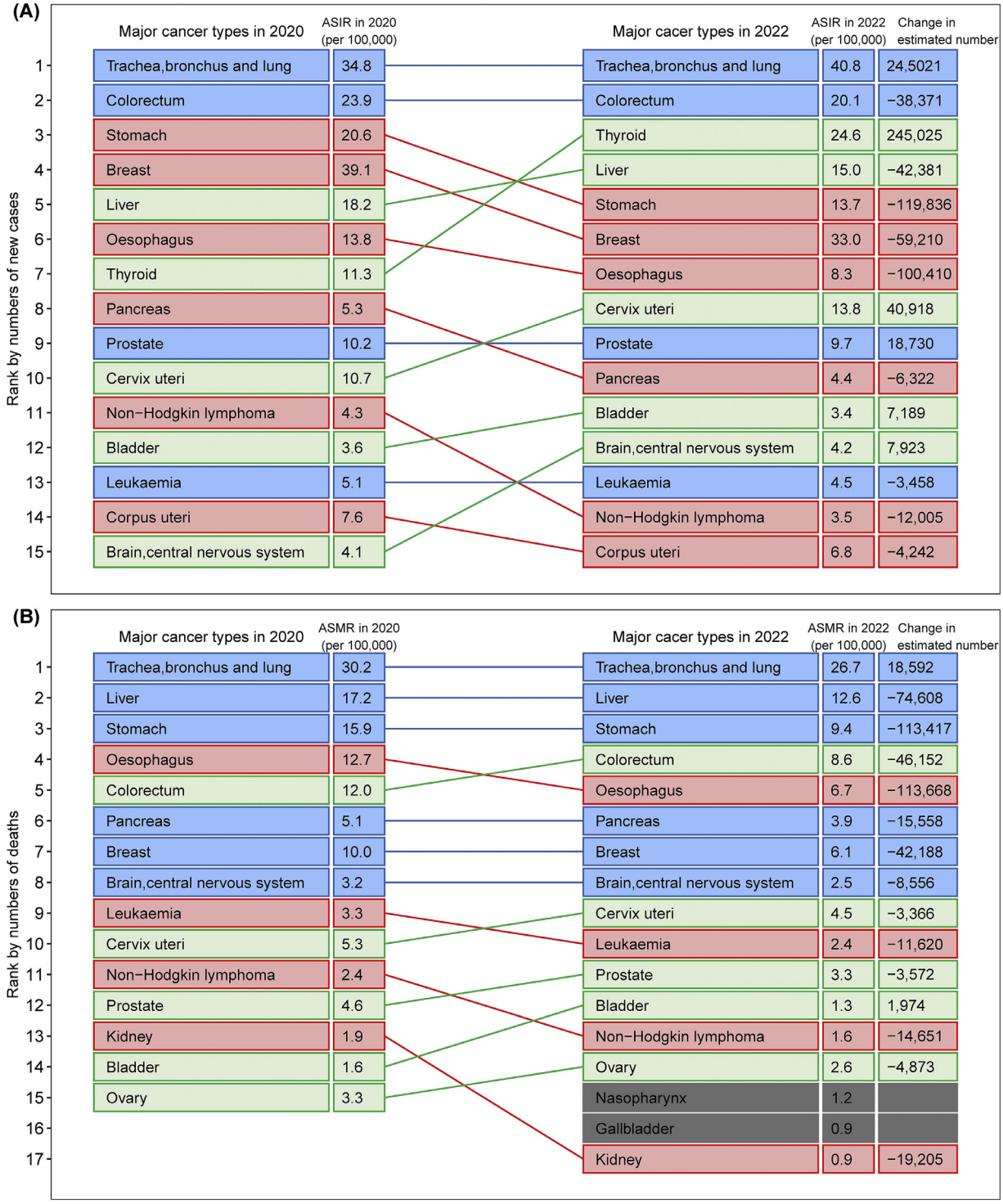

Fig. 2. A comparison of the rankings, ASIR, ASMR, and numbers of new cases and deaths of the most common cancer (A) and leading cancer death (B) in China between 2020 and 2022. Blue represents no rank change, red represents a rank decrease, and green represents a rank increase. ASIR, age-standardized incidence rate; ASMR, age-standardized mortality rate.

to 2020. Conversely, stomach cancer, breast cancer, and oesophageal cancer, ranking fifth to seventh though, demonstrated a conspicuous decline in both case counts and ASIR. Cervical cancer replaced pancreatic cancer, rising to the eighth position, with a surplus of 40,918 cases observed in 2022 relative to 2020. In terms of cancer mortality, lung, liver, and stomach cancers were the leading causes of cancer deaths. Oesophageal cancer dropped from the fourth in 2020 to the fifth in 2022, accompanied by a significant decline in both ASMR and absolute number of deaths. Cancers of pancreas, breast, and central nervous system ranked sixth to eighth, respectively. Moreover, leukemia, non-Hodgkin lymphoma, and kidney cancer showed a notable decrease in mortality.

4. Discussion

The latest global cancer estimates underscore the increasing burden of cancer and the significant disparities in cancer incidence and mor-

Table 3
The MIRs of the world, the 4-tier HDI regions, and the top 10 economies in the years 2020 and 2022.

Region	2020 MIR	2022 MIR
World	0.516	0.488
Regions according to HDI		
Very high HDI	0.389	0.392
High HDI	0.613	0.537
Medium HDI	0.650	0.644
Low HDI	0.676	0.670
Top 10 economies of the world		
United States	0.268	0.255
Canada	0.316	0.344
United Kingdom	0.392	0.399
France	0.397	0.394
Germany	0.401	0.418
Japan	0.409	0.424
Italy	0.421	0.444
Russia	0.528	0.491
India	0.643	0.649
China	0.658	0.533

Abbreviations: HDI, Human Development Index; MIR, mortality-to-incidence ratio.

tality worldwide, disproportionately affecting underserved populations. According to the IARC, approximately one in five individuals will develop cancer during their lifetime, with approximately one in nine men and one in twelve women dying from the disease.[9] This increase imposes substantial emotional, physical, and financial challenges on individuals, families, and healthcare systems. Many healthcare systems in low- and middle-income countries are ill-equipped to manage this alarming burden, and a considerable proportion of cancer patients lack access to timely diagnosis and high-quality treatment, which are integral components of universal health coverage.[10] Universal health coverage ensures that individuals have access to a comprehensive range of quality healthcare services without facing financial hardships. It encompasses a continuum of essential health services, spanning from health promotion and disease prevention to diagnosis, treatment, rehabilitation, and palliative care across the entire lifespan.[11] This principle has received national recognition in numerous countries in recent years.[12] A strategic framework at the national level, embracing a holistic, population-wide health management model extended from health promotion to integrated cancer treatment, should be proposed to achieve effective cancer care for all.

The changing global cancer burden exhibits several key characteristics. Firstly, the incidence of thyroid cancer has increased globally, predominantly driven by papillary thyroid carcinoma, although mortality rates of this cancer have remained consistently low.[13] This rise correlates with increased utilization of diagnostic imaging and fine-needle aspiration biopsy,[14] leading to incidental detection of previously undetectable cancers. Secondly, there has been a universal decline in the burden of gastrointestinal cancer worldwide and in China. Lifestyle modifications, including obesity control in high-income settings and continuing interventions on the smoking and alcohol use, have played a critical role in reducing the burden of oesophageal cancer.[15] Population-based screening for oesophageal cancer in high-incidence areas of China has shown efficacy in reducing cancer mortality.[16] Possible explanations for declines in stomach cancer incidence and mortality include improvements in food preservation, economic development leading to better living conditions and healthcare access, and decreased prevalence of H. pylori.[15,17] Vaccine against hepatitis B virus contributes to preventing liver cancer by averting chronic hepatitis infections. Thirdly, the increasing global cancer burden reflects both population aging and growth, alongside changes in exposure to risk factors, many of which are correlated with socioeconomic development. Infection-related cancers are being transitionally supplanted by those linked to socioeconomic improvement. Breast, lung, and cervical cancers can be effectively screened for and have reduced mortality rates when detected early.[18,19] The most commonly diagnosed cancers are often preventable via mitigating risk factors such as tobacco, alcohol, and obesity. Therefore, comprehensive primary, secondary, and tertiary prevention strategies are imperative in addressing the current cancer epidemic.

Substantial variations exist in the estimated burden of cancer across continents and countries. The large proportions of new cancer cases and deaths in Asia, accounting for nearly half of the global incidence and the majority of mortality, are primarily due to the region's huge population, and also associated with its specific cancer profile.[20] This is further compounded by varying access to healthcare and disparities in health outcomes. Europe's higher-than-average cancer incidence and mortality rates could be attributed to its older population and established healthcare systems that facilitate better detection and reporting.[21] The observed discrepancies in the distribution of cancer incidence and mortality between countries with higher and lower HDI scores underline the persistent influence of socioeconomic status on the cancer burden. Addressing these disparities requires targeted, multifaceted interventions that include health policy reforms, improved access to healthcare, and public health initiatives that focus on cancer prevention, early detection, and equitable treatment access. As the global cancer burden continues to evolve, it is imperative that policymakers, researchers, and healthcare providers collaborate to develop and implement strategies that mitigate the impact of cancer on individuals and societies.

The global MIR decreased in 2022 compared with 2020, suggesting potential improvements in cancer outcomes worldwide. The heterogeneous nature of MIR trends across countries warrants further investigation into the underlying factors contributing to these variations. The observed increases in MIRs among certain countries, such as Canada, Germany and India, underscore the need for targeted interventions to address specific challenges in cancer control and management within these populations.[6,7] Continued efforts in research, innovation, and collaboration, are essential for achieving equitable cancer outcomes worldwide.

The MIR trends across different HDI levels and countries shed light on the complex interplay between socioeconomic status and cancer outcomes. The observed upward trend in MIRs with decreasing HDI levels underscores the influence of socioeconomic factors on cancer mortality. Countries with lower HDI levels tend to face greater challenges in accessing quality healthcare services, early detection programs, and effective treatments, resulting in higher mortality relative to incidence.[22,23] The disparities in MIRs among the top 10 economies further highlight the importance of healthcare infrastructure and resources in mitigating cancer mortality. Notably, the United States consistently exhibited the lowest MIR values, indicating better survival outcomes despite the high prevalence of cancer. This could be attributed to factors such as advanced healthcare technologies, widespread access to screening and treatment modalities, and robust healthcare systems.[4,24] Conversely, India's substantially higher MIR reflects the challenges faced by low- and middle-income countries in addressing the burden of cancer, including limited healthcare resources, inadequate infrastructure, and socioeconomic disadvantages.[7,25] However, it should be noted that the MIR can be influenced by factors such as screening practices and detection methods. Cancers that are more likely to be detected early through screening programs may have lower MIRs, while those detected at later stages may have higher MIRs. This can introduce length bias and lead-time bias when comparing MIRs across populations or over time.

Additionally, we outlined the evolving landscape of the cancer burden in China. China places significant emphasis on the prevention and control of chronic diseases, notably cancer. Within the Healthy China Initiative (2019–2030), cancer prevention and control ranks among the fifteen major special actions. Recent years have witnessed notable progress in this area, marked by the construction of the cancer prevention and control system and advancements in cancer registration, early diagnosis and treatment, as well as standardized care. In 2022, the

awareness rate of cancer prevention core knowledge exceeded 70%,[26] and the overall five-year survival rate of cancer reached 43.7%.[27] In 2023, the National Health Commission and 12 other ministries jointly released the Healthy China Initiative-Implementation Plan for Cancer Prevention and Control (2023–2030).[28] The plan builds upon previous achievements, emphasizing government leadership, multi-departmental collaboration, prioritizing cancer prevention, focusing on holistic health processes, integrating medical and preventive measures, and leveraging cutting-edge technology for support. Despite these advancements, challenges persist, particularly given the ongoing acceleration of population aging and the prevalence of unhealthy lifestyles. Addressing these challenges demands continued collective efforts to ensure equitable development in cancer prevention and control.

5. Conclusions

The global landscape of cancer incidence and mortality in 2022 reflects ongoing trends observed in 2020. Cancer burdens vary notably across continents and countries with differing socioeconomic statuses. Decreases in stomach, liver, and oesophageal cancer cases and deaths signify progress in cancer control efforts. The decrease in the global MIRs also highlights potential improvements in cancer management. Achieving a thorough comprehension of both the overall landscape and regional intricacies is imperative to enable precise and effective responses to the forthcoming challenges in cancer prevention and control.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author contributions

W.Q.C. and W.C. conducted the conceptualization. K.Q. performed the data curation, analysis, and methodology. W.C. wrote the original draft. K.Q., F.L., and W.Q.C. reviewed and edited the manuscript. W.Q.C. conducted the project administration and supervision. The manuscript has been read and approved by all the authors.

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