

The global impact of the COVID-19 pandemic on delays and disruptions in cancer care services: A systematic review and meta-analysis

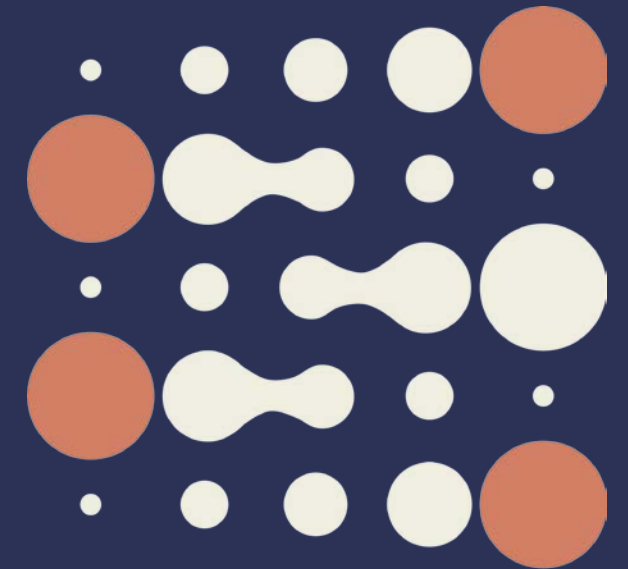
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Introduction

The COVID-19 pandemic severely impacted cancer services and programmes from prevention and early detection to treatment¹

Much of the pertinent information on the pandemic's toll on cancer care remains scattered throughout the literature and need quantification on global and regional levels^{2,3}

Many studies did not measure the extent of the disruptions in terms of reductions in various cancer services during the pandemic period compared to the pre-pandemic period globally

We systematically reviewed the impact of the COVID-19 pandemic on cancer care delays and disruptions, focusing on comparisons to pre-pandemic periods and covering early detection, diagnosis, and treatment (including surgery, radiotherapy, and systemic therapy)

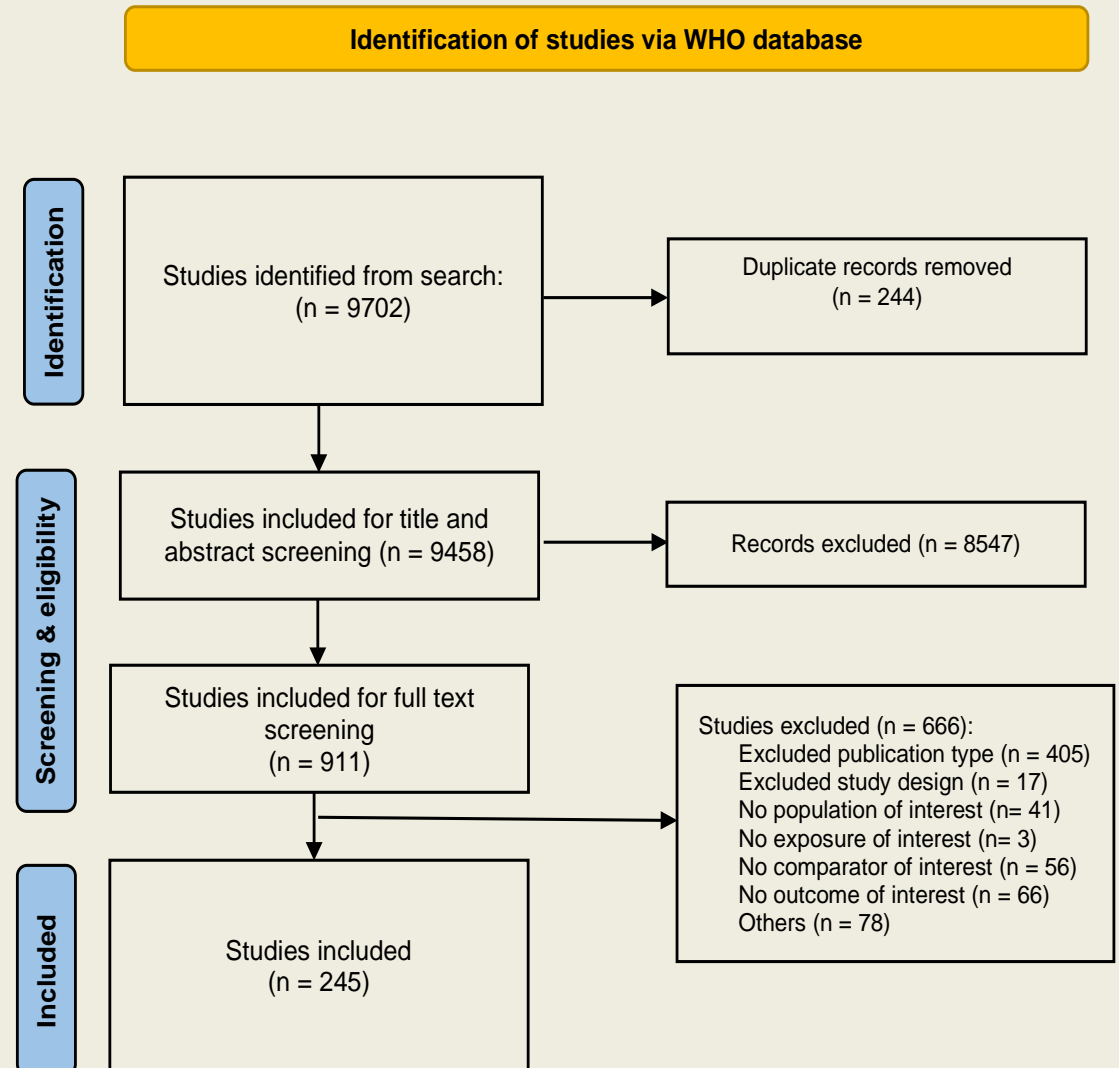
References:

1. Estimated cumulative excess deaths per 100,000 people during COVID: Our World in Data. *The Economist* <https://ourworldindata.org/grapher/excess-deaths-cumulative-per-100k-economist> (2023).
2. Riera, R. *et al.* Delays and disruptions in cancer health care due to COVID-19 pandemic: Systematic review. *JCO Glob. Oncol.* 311–323 (2021).
3. Moynihan, R. *et al.* Impact of COVID-19 pandemic on utilisation of healthcare services: A systematic review. *BMJ Open* **11**, e045343 (2021).

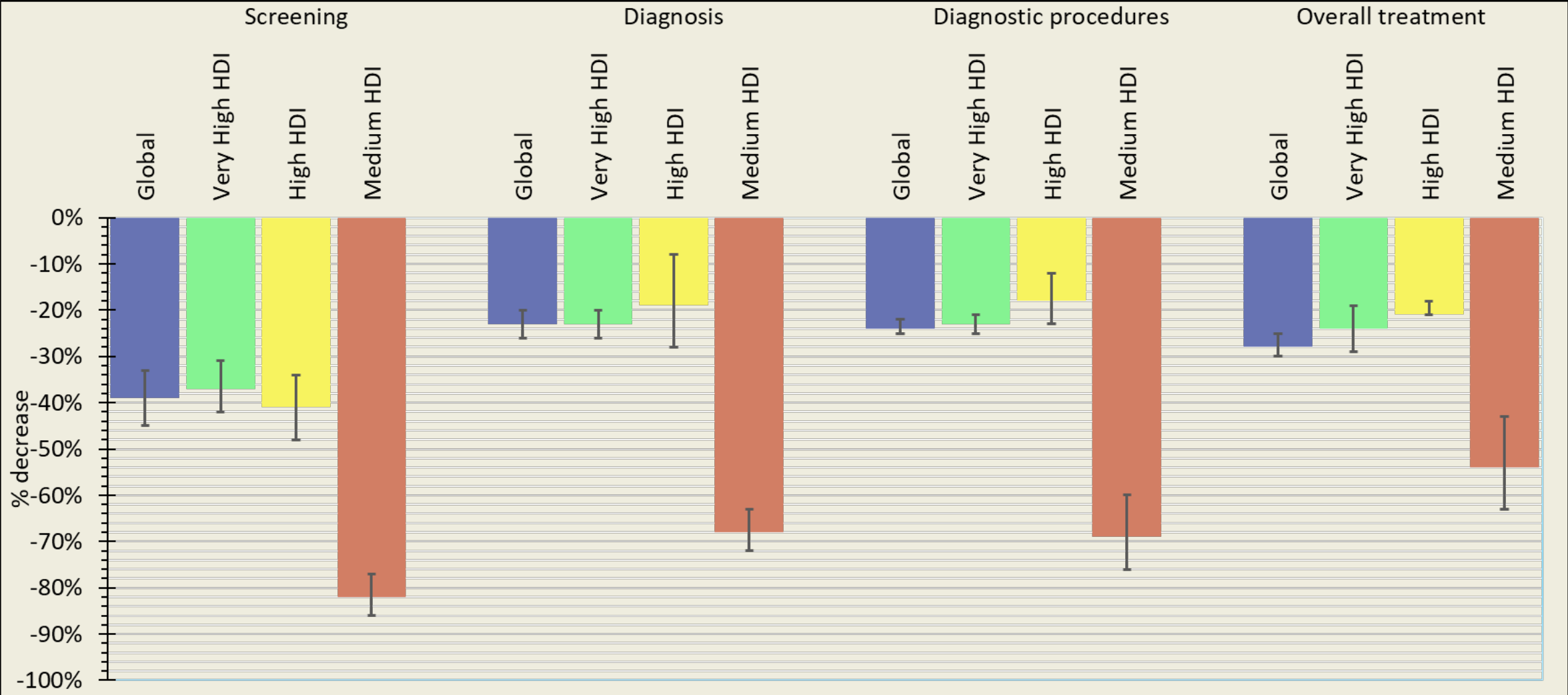
Methods and Results

- Adherence to Preferred Reported Items for Systematic Reviews and Meta-Analysis guidelines
- Registered with the International Prospective Register of Systematic Reviews database (CRD42022301816)
- Search of WHO COVID-19 database until 17 April 2022 without language restriction
- Quality assessment using Quality Assessment Tool for Before-After (Pre-Post) Studies with No Control Group

PRISMA flow diagram for selection of included studies



Reductions in cancer care services by HDI during the COVID-19 pandemic compared to the pre-pandemic period



Pooled effect using random effects meta-analysis with DerSimonian-Laird weighting

Discussion and Conclusions

Disruptions in Cancer Diagnosis

- Decrease in new cancer diagnosis due to suspension or postponement of screening, routine diagnostic procedures, diagnostic tests and non-urgent medical procedures⁴
- Restrictions on non-urgent hospital visits, strict lockdown or stay-at-home orders, and reduced promotional activities on cancer screening, and patient hesitancy to seek care⁵

Disruptions in Cancer Treatment

- Depleted stocks as a result of border closures and fracture of supply chains⁶
- Shortage of COVID-19 tests and personal protective equipment (PPE)⁷
- Modified treatment protocols: adoption of hypo-fractionated radiotherapy; decreased number of systemic therapy cycles and/or prolonged interval between two cycles; oral regimens preferred over intravenous when an alternative was available

References:

4. Patt, D. *et al.* Impact of COVID-19 on Cancer Care: How the pandemic is delaying cancer diagnosis and treatment for American seniors. *JCO Clin. Cancer Inform.* **4**, 1059–1071 (2020).
5. Liu, Y.-A. *et al.* Hospital visiting policies in the time of coronavirus disease 2019: A nationwide website survey in Taiwan. *J. Chin. Med. Assoc. JCMA* **83**, 566–570 (2020).
6. Kugbey, N., Ohene-Oti, N. & Vanderpuye, V. COVID-19 and its ramifications for cancer patients in low-resource settings: Ghana as a case study. *ecancermedicalscience* **14**, ed99 (2020).
7. Vanderpuye, V., Elhassan, M. M. A. & Simonds, H. Preparedness for COVID-19 in the oncology community in Africa. *Lancet Oncol.* **21**, 621–622 (2020).

Key take-home messages

A marked decline in the number of individuals screened for breast, cervix, and colorectal cancers alongside decrease in diagnostic procedures, may partly cause the observed 23% reduction in the number of new cancer diagnoses during the pandemic globally

During the pandemic, a decrease of 28% in the number of people receiving treatment for any cancer was observed with varying degree of decline found in surgery, systemic therapy, and radiotherapy for patients with cancer

Data was unavailable for countries with low human development index (HDI), and where data existed, medium HDI countries experienced greater reductions than the higher HDI countries.

THANK YOU

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