

# The content and utilization of digital solutions in the field of oncology: A Systematic Review

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**Background:** Over the last decades, significant advancements in medical treatments, improved social conditions, and overall healthcare have resulted in longer and healthier lives for people in Europe. Despite these positive developments, cancer continues to impact people, and their significant others and places major pressure on health and social systems and economies. In response to the urgent need to improve cancer control and outcomes across Europe, EU developed the Europe's Beating Cancer Plan demonstrating a political commitment to act against cancer. One of the core aspects of this plan is the implementation of digital transformation in healthcare. In most countries there is a lack of continuous training for the cancer healthcare workforce in digital solutions in health and oncology and with the simultaneous lack of any strategic perspective, digital tools are rarely perceived as a new care delivery model. The 1st part of TRANSITION Project was to identify the content and utilization of digital solutions in the field of Oncology for HCPs and health managers.

**Methods:** A systematic review followed the guidelines provided by the PRISMA 2020. The review included studies conducted between the years 2018-2023 and involved HCPs and NCPs in the field of oncology and engaged in all aspects of care from prevention to palliative care and end of life care. Studies included any type of digital tools applied in cancer care such as mHealth apps, eHealth platforms, telemedicine, and other digital solutions. Cross-sectional studies, case series, case-control, retrospective comparative cohort studies, study protocols and reviews were excluded.

**Results:** Our search yielded 26,596 publications. Following the screening phase, the final number of studies for the systematic review was 30. The majority of the studies followed an RCT design and included interventions such as mobile application (mHealth), web-based intervention (eHealth), virtual reality, and /or text messages. Some of these digital tools were aimed to influence the lifestyle of breast cancer patients, to support the decision-making process and improving the quality of treatment decisions, to remote monitoring the chemotherapy-related side effects such as burden, quality of life, anxiety, etc. The duration of the interventions ranged from several minutes to months, with the maximum duration being recorded as 12 months for the digital intervention. The sample size of the studies ranged from 70 to 700 participants, with most studies including 50-70 participants in each group. The main tumors of the target group were breast, colorectal, and prostate cancer, or hematological malignancies.

**Conclusions:** The results of this systematic review showed us the importance of digital tools to improve the quality of cancer care. The main findings of the review support the cost-effectiveness of digital technologies compared to the standard of care, better self-management of the disease by the patients, and the decision-making enhancement for HCPs in clinical practice.

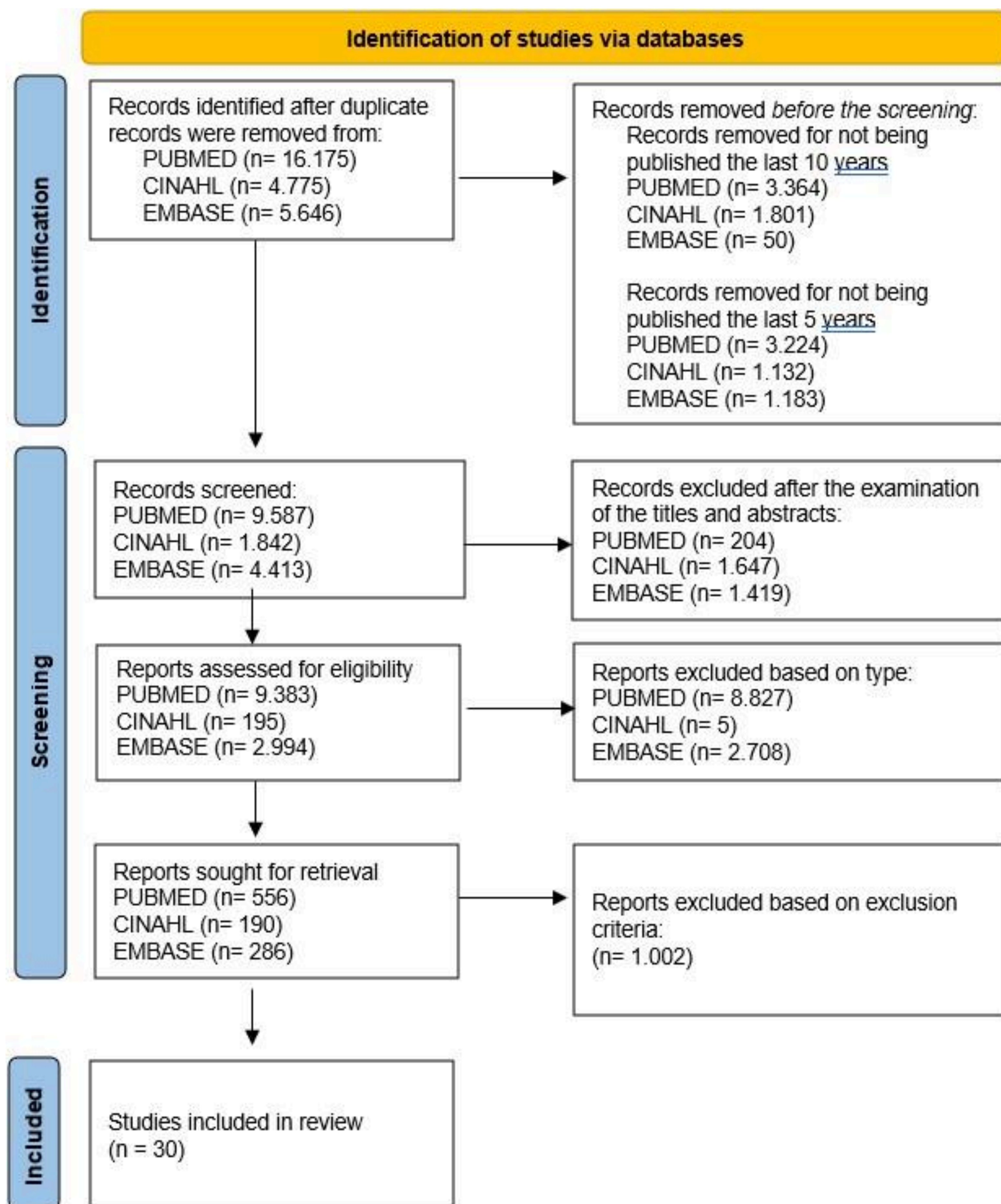


Figure 1: PRISMA diagram