Health Education

1-Structured Exercise after Adjuvant Chemotherapy for Colon Cancer

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Abstract

BACKGROUND

Preclinical and observational studies suggest that exercise may improve cancer outcomes. However, definitive level 1 evidence is lacking.

METHODS

In this phase 3, randomized trial conducted at 55 centers, we assigned patients with resected colon cancer who had completed adjuvant chemotherapy to participate in a structured exercise program (exercise group) or to receive health-education materials alone (health-education group) over a 3-year period. The primary end point was disease-free survival.

RESULTS

From 2009 through 2024, a total of 889 patients underwent randomization to the exercise group (445 patients) or the health-education group (444 patients). At a median follow-up of 7.9 years, disease-free survival was significantly longer in the exercise group than in the health-education group (hazard ratio for disease recurrence, new primary cancer, or death, 0.72; 95% confidence interval [CI], 0.55 to 0.94; P = 0.02). The 5-year disease-free survival was 80.3% in the exercise group and 73.9% in the health-education group (difference, 6.4 percentage points; 95% CI, 0.6 to 12.2). Results support longer overall survival in the exercise group than in the health-education group (hazard ratio for death, 0.63; 95% CI, 0.43 to 0.94). The 8-year overall survival was 90.3% in the exercise group and 83.2% in the health-education group (difference, 7.1 percentage points; 95% CI, 1.8 to 12.3). Musculoskeletal adverse events occurred more often in the exercise group than in the health-education group (in 18.5% vs. 11.5% of patients).

CONCLUSIONS

A 3-year structured exercise program initiated soon after adjuvant chemotherapy for colon cancer resulted in significantly longer disease-free survival and findings consistent with longer overall survival.

Keywords

Keywords Plus

PHYSICAL-ACTIVITYCHANGE TRIAL6-MIN WALKSURVIVALHEALTHFITNESSCONSUMPTIONPREDICTORPROGRAMIMPACT

Health Education

2-Cancer Control in the Middle East 4 Cancer control in the United Arab Emirates

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Abstract

The United Arab Emirates (UAE) is confronting a growing cancer burden. Although the UAE continues to invest substantially in health care, increase in cancer cases places considerable health, economic, and societal strain on the country, and has been driven by the complexity of late-stage treatments, declines in workforce productivity, and broader effects of national economic output. The unique population demographic of the UAE, coupled with its healthcare structure, requires a tailored approach to cancer control from screening to treatment. This Series paper evaluates the current state of cancer control in the UAE, identifying barriers and gaps in the current system and proposing actionable recommendations for improvement. A comprehensive national cancer control plan-supported by robust data, international partnerships, and strategic policy reforms-is urgently needed. Central initiatives include expanding early detection and screening efforts, improving access to multidisciplinary cancer centres, and adopting advanced diagnostic technologies. Additional priorities involve bolstering the oncology workforce, fostering public- private partnerships, elevating care quality, and harnessing digital health innovations. Public health education campaigns and equitable service distribution are also essential to improve the outcome of common malignancies, particularly breast, colorectal, and lung cancers. Guided by the UAE's Vision 2031 agenda, these measures aim to build a resilient oncology ecosystem that reduces mortality, optimises patient outcomes, and establishes a regional standard for equitable, high-quality cancer care.

Health Education

3-2024 Adult Compendium of Physical Activities: A third update of the energy costs of human activities

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Abstract

Background: The Compendium of Physical Activities was published in 1993 to improve the comparability of energy expenditure values assigned to self -reported physical activity (PA) across studies. The original version was updated in 2000, and again in 2011, and has been widely used to support PA research, practice, and public health guidelines. Methods: This 2024 update was tailored for adults 19-59 years of age by removing data from those >60 years. Using a systematic review and supplementary searches, we identified new activities and their associated measured metabolic equivalent (MET) values (using indirect calorimetry) published since 2011. We replaced estimated METs with measured values when possible. Results: We screened 32,173 abstracts and 1507 full -text papers and extracted 2356 PA energy expenditure values from 701 papers. We added 303 new PAs and adjusted 176 existing MET values and descriptions to reflect the addition of new data and removal of METs for older adults. We added a Major Heading (Video Games). The 2024 Adult Compendium includes 1114 PAs (912 with measured and 202 with estimated values) across 22 Major Headings. Conclusion: This comprehensive update and refinement led to the creation of The 2024 Adult Compendium, which has utility across research, public health, education, and healthcare domains, as well as in the development of consumer health technologies. The new website with the complete lists of PAs and supporting resources is available at https://pacompendium.com.

Keywords

Author Keywords

AdultsEnergy expenditureExerciseMETPhysical Activities

Keywords Plus

ACTIVITY CODESGUIDELINESSEDENTARYRISK

Health Education

4-Artificial intelligence for low income countries

By Khan, MS (Khan, Muhammad Salar) [4] ; Umer, H (Umer, Hamza) [1] , [2] ; Faruqe, F (Faruqe, Farhana) [3] (provided by Clarivate) **Source HUMANITIES & SOCIAL SCIENCES COMMUNICATIONS Volume 11 Issue 1 DOI 10.1057/s41599-024-03947-w Article Number 1422 Published OCT 25 2024 Indexed 2024-10-31 Document Type Article**

Abstract

The global adoption rate of artificial intelligence (AI) is rising, indicating its transformative potential. However, this adoption is far from uniform, with low-income countries (LICs) trailing behind significantly. Despite needing AI for development, LICs face multiple challenges in harnessing its benefits, exacerbating existing global disparities in technology adoption. In spite of the potentially important role that AI can play in the development of LICs, AI literature overlooks these countries, with research predominantly focused on more advanced economies. This lack of inclusivity contradicts the principles of distributive justice and global equity, prompting us to explore the importance of AI for LICs, offer a theoretical grounding for AI catch-up, identify effective AI domains, and propose strategies to bridge the AI gap. Drawing insights from the leapfrogging and absorptive capacities literature, our position paper presents the feasibility of AI catch-up in LICs. One crucial finding is that there is no one-size-fits-all approach to achieving AI catch-up. LICs with strong foundations could favor leapfrogging strategies, while those lacking such foundations might find learning and acquisition prescriptions from absorptive capacity literature more relevant. The article also makes policy recommendations that advocate for the swift integration of AI into critical LIC domains such as health, education, energy, and governance. While LICs must address challenges related to digital infrastructure, human capital, institutional robustness, and effective policymaking, among others, we believe that advanced AI economies and relevant international organizations like UNESCO, OECD, USAID, and the World Bank can support LICs in AI catch-up through tech transfer, grants, and assistance. Overall, our work envisions global AI use that effectively bridges development and innovation disparities.

Keywords

Keywords Plus

TECHNOLOGICAL DETERMINISMABSORPTIVE-CAPACITYPERSPECTIVEDIFFUSIONMARRIAGEMEDICINEMODELSIMPACTAGE

5-The global, regional, and national patterns of change in the burden of congenital birth defects, 1990-2021:-2021: an analysis of the global burden of disease study 2021 and forecast to 2040

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Abstract

Background Congenital birth defects (CBDs) present enormous challenges to global healthcare systems. These conditions severely impact patients' ' health and underscore issues related to socioeconomic development and healthcare accessibility and efficiency. fi ciency. Previous studies have been geographically limited and lacked comprehensive global analysis. This study provides global, regional, and national disability-adjusted life years (DALYs) data for four major congenital birth defects-congenital - congenital heart defects (CHD), neural tube defects (NTDs), digestive congenital anomalies (DCAs), and Down syndrome (DS) from 1990 to 2021, emphasizing health inequalities. The goal is to offer scientific fi c evidence for optimizing resource allocation, focusing on high-burden populations, and reducing disease burden. Methods This study systematically evaluated the global, regional, and national burden of CBDs and their changes from 1990 to 2021 using the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021. To conduct a more focused analysis, four specific CBDs were selected: CHD, NTDs, DCAs, and DS. DALYs were used as the metric, combined with the sociodemographic index (SDI). Analyses included the slope index of inequality and concentration index to measure health inequalities, frontier analysis to estimate achievable outcomes based on development levels, decomposition analysis to identify drivers of disease burden changes, Joinpoint regression analysis to assess temporal trends, and the Bayesian age-period-cohort (BAPC) model to predict future disease burden trends. Findings Compared to 1990, the global burden of the CBDs in 2021 showed a downward trend. Males had a higher burden than females, with the highest burden observed in low-SDI regions. When examining CHD, NTDs, DCAs, and DS specifically, fi cally, trends in burden changes varied across different CBDs at the global, regional, and national levels. Frontier analysis revealed potential for burden improvement in various countries and territories. Decomposition analysis highlighted differences in disease burden drivers across SDI regions, showing the greatest improvement observed in low-SDI regions. Joinpoint regression analysis indicated a downward trend in DALYs burden across SDI regions, and BAPC model predictions suggested that the burden of CBDs will continue to decline in the future. Interpretation CBDs pose a major challenge to global public health. Despite an overall decline in disease burden, health inequalities remain prominent, particularly in countries and territories with lower levels of development. Future public health interventions should focus on countries and territories with low levels of development by optimizing healthcare resource allocation, improving basic health infrastructure, enhancing health education, and reducing disease burden inequalities. Global collaboration and data sharing are essential to promote a lifecycle management model for CBDs research and treatment, advancing global health development.

Keywords

Author Keywords

Health inequalityCongenital birth defectsSociodemographic indexGlobal burden of diseaseDisability-adjusted life-years

Keywords Plus

HEART-DISEASESUPPORT