

## SELECTED ABSTRACTS FROM PUBMED

1. *Kurup D, Schnell MJ. SARS-CoV-2 vaccines - the biggest medical research project of the 21st century. Curr Opin Virol. 2021 Aug;49:52-57.*

### ABSTRACT

SARS-CoV-2 has been detected in more than 141 million people and caused more than 3 million deaths worldwide. To reduce the additional loss of millions of lives until natural immunity is reached, researchers have focused on the only known method to stop the COVID-19 pandemic: vaccines. The pandemic has propelled high-speed vaccine development, some based on novel technology previously not utilized in the vaccine field. The new technology opens new possibilities and comes with challenges because the long-term performance of the new platforms is unknown. Here we review the current leading vaccine candidates against COVID-19 and outline the advantages and disadvantages as well as the unknowns of each candidate.

2. *Koo M. Systemic Lupus Erythematosus Research: A Bibliometric Analysis over a 50-Year Period. Int J Environ Res Public Health. 2021 Jul 2;18(13):7095. doi: 10.3390/ijerph18137095.*

### ABSTRACT

Bibliometric analysis is a well-established approach to quantitatively assess scholarly productivity. However, there have been few assessments of research productivity on systemic lupus erythematosus (SLE) to date. The aim of this study was to analyze global research productivity through original articles published in journals indexed by the Web of Science from 1971 to 2020. Bibliometric data was obtained from the Science Citation Index Expanded in the Web of Science Core Collection database. Only original articles published between 1971 and 2020 on SLE were included in the analysis. Over the 50-year period, publication production in SLE research has steadily increased with a mean annual growth rate of 8.0%. A total of 44,967 articles published in 3435 different journals were identified. The journal *Lupus* published the largest number of articles ( $n = 3371$ ; 8.0%). A total of 148 countries and regions contributed to the articles. The global productivity ranking was led by the United States ( $n = 11,244$ , 25.0%), followed by China ( $n = 4893$ , 10.9%). A three-field plot showed that the Oklahoma Medical Research Foundation and the Johns Hopkins University together contributed 18.5% of all articles from the United States. A co-occurrence network analysis revealed five highly connected clusters of SLE research. In conclusion, this bibliometric analysis provided a comprehensive overview of the status of SLE research, which could enable a better understanding of the development in this field in the past 50 years.

**Keywords:** bibliometric analysis; bibliometric; network analysis; research hotspots; research trends; systemic lupus erythematosus.

3. *Koch LK, Chang OH, Dintzis SM. Medical Education in Pathology: General Concepts and Strategies for Implementation. Arch Pathol Lab Med. 2021 Sep 1;145(9):1081-1088. doi: 10.5858/arpa.2020-0463-RA.*

### ABSTRACT

**Context:** Pathology education must evolve as medical knowledge expands and disruptive technologies emerge. The evolution in pathology teaching practices accelerated as traditional teaching modalities were suspended in March 2020 during the coronavirus disease 2019 (COVID-19) pandemic.

**Objectives:** To provide pathologists an overview of established teaching paradigms and practical examples of how these paradigms may be applied to pathology education, emphasizing differences in graduate and undergraduate medical education as well as the challenges and promises of remote learning, as revealed by the COVID-19 pandemic.

**Data sources:** Selected peer-reviewed publications representing the field of educational social science.

**Conclusions:** Evidence-based methods described in education and social sciences can be effectively deployed in pathology education and especially remote learning, as necessitated by the current COVID-19 pandemic. Understanding established principles, such as cognitive load, competency-based learning, peer-assisted learning, and flipped classrooms may prove useful in developing effective, learner-centric content for pathology education.

4. *Wang W. Medical education in china: progress in the past 70 years and a vision for the future. BMC Med Educ. 2021 Aug 28;21(1):453. doi: 10.1186/s12909-021-02875-6.*

### ABSTRACT

Medical education in China has undergone significant reforms in contemporary times. As the world's largest medical education system, it is important to understand the status of China's medical education in our interdependent world. This paper highlights the current landscape of medical education in China, particularly the progress that have been made in recent years. It also examines the current topics and challenges facing China's medical educators today, and proposed recommendations for improving medical education in China. The medical education in China will produce better qualified health professionals to meet the health needs of Chinese population according to the new requirements of the "Healthy China 2030" blueprint.

**Keywords:** China; Health professional; Medical education; Reform.

5. *Soliman M, Bilszta J. Teaching complementary and alternative medicine in undergraduate medical education: a scoping review. Int J Med Educ. 2021 Jul 27;12:140-149. doi: 10.5116/ijme.60e2.f3ed.*

**ABSTRACT**

**Objectives:** This scoping review explores the extent to which undergraduate medical education have incorporated complementary and alternative medicine in their curricula and evaluates the teaching, delivery and assessment approaches used.

**Methods:** ERIC, Ovid Medline and Pubmed databases were searched with keywords related to "complementary and alternative medicine" and "undergraduate medical education" for relevant articles published until August 2020. Data extraction included the presence/absence of complementary and alternative medicine integration, program duration, instructor background, and assessment methods.

**Results:** Of 1146 citations, 26 met the inclusion criteria. Complementary and alternative medicine teaching in undergraduate medical education was widely inconsistent and not well aligned with clearly identified aims and objectives. Various complementary and alternative medicine disciplines were taught, demonstrated or observed, and several programs included teaching on evidence-based medicine. Educational outcomes mainly assessed student satisfaction and learning through self-evaluation and rarely assessed for effectiveness with regards to changing clinical practice or impacts on patient outcomes.

**Conclusions:** Inconsistencies in complementary and alternative medicine teaching and assessment in undergraduate medical education reflect the lack of defined graduate competencies. An evidence-based medicine component of an educational program is a potential solution to overcoming breadth and content challenges. Curriculum developers would be better guided with research that determines if complementary and alternative medicine program design, content and assessment influence clinical practice and/or patient outcomes.

**Keywords:** complementary and alternative medicine; curriculum design; evidence-based medicine; medical students; undergraduate medical education.

6. *Kaufman A, Scott MA, Andazola J, Fitzsimmons-Pattison D, Parajón L. Social Accountability and Graduate Medical Education. Fam Med. 2021 Jul 7;53(7):632-637. doi: 10.22454/FamMed.2021.160888. Epub 2021 Jun 4.*

**ABSTRACT**

Because graduate medical education (GME) is largely publicly funded, it should be judged on how well it addresses the public's health needs. However, the current system distributes GME resources inequitably by specialty and geography, and neglects to focus on training physicians adequately in the care of populations while reducing health disparities. Instead, GME continues to concentrate training in hospital-based academic centers and in subspecialties, which often exacerbates disparities in health outcomes and access to care. GME can be more socially accountable by shifting incentive structures to support primary care,

creating more equitable distribution of residency slots and funding, and promoting training programs that focus on social and structural determinants of health.

7. *Moniz T, Golafshani M, Gaspar CM, Adams NE, Haidet P, Sukhera J, et al. The prism model: advancing a theory of practice for arts and humanities in medical education. Perspect Med Educ. 2021 Aug;10(4):207-214. doi: 10.1007/s40037-021-00661-0. Epub 2021 Apr 29.*

**ABSTRACT**

**Introduction:** The arts and humanities have transformative potential for medical education. Realizing this potential requires an understanding of what arts and humanities teaching is and what it aims to do. A 2016 review of exclusively quantitative studies mapped three discursive positions (art as intrinsic to, additive to or curative for medicine) and three epistemic functions (art for mastering skills, perspective taking, and personal growth and activism). A more inclusive sample might offer new insights into the position and function of arts and humanities teaching in medical education.

**Methods:** Informed by this 2016 framework, we conducted discursive and conceptual analyses of 769 citations from a database created in a recent scoping review. We also analyzed the 15 stakeholder interviews from this review for recurring themes. These three analyses were iteratively compared and combined to produce a model representing the complex relationship among discursive functions and learning domains.

**Results:** The literature largely positioned arts and humanities as additive to medicine and focused on the functions of mastering skills and perspective taking. Stakeholders emphasized the intrinsic value of arts and humanities and advocated their utility for social critique and change. We offer a refined theory of practice-the Prism Model of four functions (mastering skills, perspective taking, personal insight and social advocacy)-to support more strategic use of arts and humanities in medical education across all learning domains.

**Discussion:** The Prism Model encourages greater pedagogical flexibility and critical reflection in arts and humanities teaching, offering a foundation for achieving its transformative potential.

**Keywords:** Arts; Humanities; Medical education; Qualitative analysis.

8. *Mahmood T, Shapiro MD. The Questions on Everyone's Mind: What is and Why Do We Need Preventive Cardiology? Methodist Debaque Cardiovasc J. 2021 Sep 24;17(4):8-14. doi: 10.14797/mdcvj.698. eCollection 2021.*

**ABSTRACT**

Despite being largely preventable, atherosclerotic cardiovascular disease (ASCVD) continues to be the leading source of morbidity and mortality worldwide. While the past few decades have seen a substantial reduction in ASCVD

mortality, much of this is due to significant improvements in treatment of already manifest disease, with its attendant morbidity and impact on quality of life. Moreover, evidence now suggests that ASCVD mortality in the United States has hit a nadir and is likely to start increasing again. It is now time to shift our attention from intervention to prevention. In this review, we explore the tremendous opportunity to define and implement the discipline of preventive cardiology.

**Keywords:** atherosclerotic cardiovascular disease; diabetes; dyslipidemia; hypertension; medical subspecialty; obesity; preventive cardiology; risk assessment.

9. *Kinast B, Lutz M, Schreiweis B. Telemonitoring of Real-World Health Data in Cardiology: A Systematic Review. Int J Environ Res Public Health. 2021 Aug 27;18(17):9070. doi: 10.3390/ijerph18179070.*

#### ABSTRACT

**Background:** New sensor technologies in wearables and other consumer health devices open up promising opportunities to collect real-world data. As cardiovascular diseases remain the number one reason for disease and mortality worldwide, cardiology offers potent monitoring use cases with patients in their out-of-hospital daily routines. Therefore, the aim of this systematic review is to investigate the status quo of studies monitoring patients with cardiovascular risks and patients suffering from cardiovascular diseases in a telemedical setting using not only a smartphone-based app, but also consumer health devices such as wearables and other sensor-based devices.

**Methods:** A literature search was conducted across five databases, and the results were examined according to the study protocols, technical approaches, and qualitative and quantitative parameters measured.

**Results:** Out of 166 articles, 8 studies were included in this systematic review; these cover interventional and observational monitoring approaches in the area of cardiovascular diseases, heart failure, and atrial fibrillation using various app, wearable, and health device combinations.

**Conclusions:** Depending on the researcher's motivation, a fusion of apps, patient-reported outcome measures, and non-invasive sensors can be orchestrated in a meaningful way, adding major contributions to monitoring concepts for both individual patients and larger cohorts.

**Keywords:** atrial fibrillation; cardiology; cardiovascular disease; consumer health devices; heart failure; sensors; telecardiology; telemedicine; telemonitoring; wearable.

10. *Kubota S, Hara H, Hiroi Y. Current status and future perspectives of onco-cardiology: Importance of early detection and intervention for cardiotoxicity, and cardiovascular complication of novel cancer treatment. Glob Health Med. 2021 Aug 31;3(4):214-225. doi: 10.35772/ghm.2021.01024.*

#### ABSTRACT

The prognosis has improved remarkably in recent years with the development of cancer treatment. With the increase in the number of cancer survivors, complications of cardiovascular disease have become a problem. Therefore, the field of onco-cardiology has been attracting attention. The field of onco-cardiology covers a wide range of areas. In the past, cardiac dysfunction caused by cardiotoxic drug therapies such as doxorubicin (Adriamycin) was the most common cause of cardiac dysfunction, but nowadays, cardiovascular complications caused by aging cancer survivors, atherosclerotic disease in cardiovascular risk carriers, thromboembolism, and new drugs (e.g., myocarditis caused by immune checkpoint inhibitors and hypertension caused by angiogenesis) are becoming more common. In this review, we summarize the latest findings of cardiotoxicity of cancer therapy, appropriate treatment and prevention, and cardiovascular complications of novel chemotherapy, which will increase in demand in the near future.

**Keywords:** anthracycline; cancer-associated thrombosis (CAT); cardiotoxicity; immune checkpoint inhibitors-associated myocarditis; radiotherapy.

11. *Cerreto M, Santopaolo F, Gasbarrini A, Pompili M, Ponziani FR. Bariatric Surgery and Liver Disease: General Considerations and Role of the Gut-Liver Axis. Nutrients. 2021 Jul 30;13(8):2649. doi: 10.3390/nu13082649.*

#### ABSTRACT

Weight loss is a therapeutic solution for many metabolic disorders, such as obesity and its complications. Bariatric surgery aims to achieve lasting weight loss in all patients who have failed after multiple dietary attempts. Among its many benefits, it has been associated with the regression of non-alcoholic fatty liver disease (NAFLD), which is often associated with obesity, with evidence of substantial improvement in tissue inflammation and fibrosis. These benefits are mediated not only by weight loss, but also by favorable changes in systemic inflammation and in the composition of the gut microbiota. Changes in microbial metabolites such as short-chain fatty acids (SCFAs), capable of acting as endocrine mediators, and bile acids (BAs) as well as modifications of the gut-brain axis, are among the involved mechanisms. However, not all bariatric surgeries show beneficial effects on the liver; those leading to malabsorption can cause liver failure or a marked worsening of fibrosis and the development of cirrhosis. Nevertheless, there are still many unclear aspects, including the extent of the benefits and the magnitude of the risks of bariatric surgery in cirrhotic patients. In addition, the usefulness and the safety of these procedures in patients who are candidates to or who have undergone liver transplant need solid supporting evidence. This paper aims to review literature data on the use of bariatric surgery in the setting of chronic liver disease.

**Keywords:** MAFLD; NAFLD; bariatric surgery; cirrhosis; gut microbiota; liver transplant.

12. *Gokce N, Karki S, Dobyns A, Zizza E, Sroczynski E, Palmisano JN, et al. Association of Bariatric Surgery with Vascular Outcomes. JAMA Netw Open. 2021 Jul 1;4(7):e2115267. doi: 10.1001/jamanetworkopen.2021.15267.*

#### ABSTRACT

**Importance:** Bariatric surgical weight loss is associated with reduced cardiovascular mortality; however, the mechanisms underlying this association are incompletely understood.

**Objectives:** To identify variables associated with vascular remodeling after bariatric surgery and to examine how sex, race, and metabolic status are associated with microvascular and macrovascular outcomes.

**Design, setting, and participants:** This population-based longitudinal cohort included 307 individuals who underwent bariatric surgery. Participants were enrolled in the bariatric weight loss program at Boston Medical Center, a large, multi-ethnic urban hospital, with presurgical and postsurgical assessments. Data were collected from December 11, 2001 to August 27, 2019. Data were analyzed in September 2019.

**Exposure:** Bariatric surgery.

**Main outcomes and measures:** Flow-mediated dilation (FMD) and reactive hyperemia (RH) (as measures of macrovascular and microvascular function, respectively) and clinical variables were measured preoperatively at baseline and at least once postoperatively within 12 months of the bariatric intervention.

**Results:** A total of 307 participants with obesity (mean [SD] age, 42 [12] years; 246 [80%] women; 199 [65%] White; mean [SD] body mass index, 46 [8]) were enrolled in this study. Bariatric surgery was associated with significant weight loss and improved macrovascular and microvascular function across subgroups of sex, race, and traditional metabolic syndrome (mean [SD] pre- vs postsurgery weight: 126 [25] kg vs 104 [25] kg;  $P < .001$ ; mean [SD] pre- vs postsurgery FMD: 9.1% [5.3] vs 10.2% [5.1];  $P < .001$ ; mean [SD] pre- vs postsurgery RH: 764% [400] vs 923% [412];  $P < .001$ ). Factors associated with change in vascular phenotype correlated most strongly with adiposity markers and several metabolic variables depending on vascular territory (eg, association of weight change with change in RH: estimate, -3.2; 95% CI, -4.7 to -1.8; association of hemoglobin A1c with change in FMD: estimate, -0.5; 95% CI, -0.95 to -0.05). While changes in macrovascular function among individuals with metabolically healthy obesity were not observed, the addition of biomarker assessment using high-sensitivity C-reactive protein plasma levels greater than 2 mg/dL identified participants with seemingly metabolically healthy obesity who had low-grade

inflammation and achieved microvascular benefit from weight loss surgery.

**Conclusions and relevance:** The findings of this study suggest that bariatric intervention is associated with weight loss and favorable remodeling of the vasculature among a wide range of individuals with cardiovascular risk. Moreover, differences in arterial responses to weight loss surgery by metabolic status were identified, underscoring heterogeneity in physiological responses to adiposity change and potential activation of distinct pathological pathways in clinical subgroups. As such, individuals with metabolically healthy obesity represent a mixed population that may benefit from more refined phenotypic classification.

13. *Gelpi G, Romagnoni C, Epifani F, Contino M, Antona C. Hybrid Surgery to Manage Aortic Arch Pathology. Medicina (Kaunas). 2021 Aug 30;57(9):909. doi: 10.3390/medicina57090909.*

#### ABSTRACT

**Background and Objectives:** Aortic arch disease is still a high-risk surgical challenge despite major advances both in surgical and anesthesiological management. A combined surgical and endovascular approach has been proposed for aortic arch disease treatment to avoid hypothermia and circulatory arrest in high-risk patients. **Materials and Methods:** Between June 2004 and June 2021, 112 patients were referred to our department for aortic arch surgery; 38 (33.9%) patients underwent supra-aortic debranching and endovascular treatment. Of these, 21 (55%) patients underwent type I aortic arch hybrid debranching procedure and in 17 (45%) patients a type II aortic arch hybrid debranching procedure was performed. None of the patients were emergent. **Results:** No intra-operative deaths were recorded. In the type I aortic arch hybrid debranching patients' group, one patient died at home waiting the endovascular step, one developed ascending aortic dissection and another one developed a pseudoaneurysm at the site of the debranching at follow-up. In the type II aortic arch hybrid debranching patients' group, left carotid artery branch closure was detected at follow-up in one patient. Thirty day/in-hospital rates of adverse neurological events for both the surgical and endovascular procedures were 3% for minor stroke, with no permanent neurological deficit and 0% for permanent paraplegia/paraparesis. In 100% of the cases, the endovascular step succeeded and the type Ia endoleak rate was 0%. **Conclusions:** Hybrid arch surgery is a valuable option for aortic arch aneurysm treatment in patients with high surgical risk. The choice of aortic arch debranching between type I or type II is crucial and depends on anatomic and clinical patient characteristics. Further larger scale studies are needed to better define the advantages of these techniques.

**Keywords:** TEVAR; aortic arch aneurysm; debranching; hybrid surgery.