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Title: Artificial Intelligence in Anesthesiology: Current Techniques, Clinical Applications, and Limitations.

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Abstract: Artificial intelligence has been advancing in fields including anesthesiology. This scoping review of the intersection of artificial intelligence and anesthesia research identified and summarized six themes of applications of artificial intelligence in anesthesiology: (1) depth of anesthesia monitoring, (2) control of anesthesia, (3) event and risk prediction, (4) ultrasound guidance, (5) pain management, and (6) operating room logistics. Based on papers identified in the review, several topics within artificial intelligence were described and summarized: (1) machine learning (including supervised, unsupervised, and reinforcement learning), (2) techniques in artificial intelligence (e.g., classical machine learning, neural networks and deep learning, Bayesian methods), and (3) major applied fields in artificial intelligence. The implications of artificial intelligence for the practicing anesthesiologist are discussed as are its limitations and the role of clinicians in further developing artificial intelligence for use in clinical care. Artificial intelligence has the potential to impact the practice of anesthesiology in aspects ranging from perioperative support to critical care delivery to outpatient pain management.

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Title: The new genetics of intelligence.

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Abstract: Intelligence - the ability to learn, reason and solve problems - is at the forefront of behavioural genetic research. Intelligence is highly heritable and predicts important educational, occupational and health outcomes better than any other trait. Recent genome-wide association studies have successfully identified inherited genome sequence differences that account for 20% of the 50% heritability of intelligence. These findings open new avenues for research into

the causes and consequences of intelligence using genome-wide polygenic scores that aggregate the effects of thousands of genetic variants.

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Title: Artificial Intelligence and Ophthalmology.

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Turk J Ophthalmol. 2020 Dec 29;50(6):392.

Abstract: Artificial intelligence is advancing rapidly and making its way into all areas of our lives. This review discusses developments and potential practices regarding the use of artificial intelligence in the field of ophthalmology, and the related topic of medical ethics. Various artificial intelligence applications related to the diagnosis of eye diseases were researched in books, journals, search engines, print and social media. Resources were cross-checked to verify the information. Artificial intelligence algorithms, some of which were approved by the US Food and Drug Administration, have been adopted in the field of ophthalmology, especially in diagnostic studies. Studies are being conducted that prove that artificial intelligence algorithms can be used in the field of ophthalmology, especially in diabetic retinopathy, age-related macular degeneration, and retinopathy of prematurity. Some of these algorithms have come to the approval stage. The current point in artificial intelligence studies shows that this technology has advanced considerably and shows promise for future work. It is believed that artificial intelligence applications will be effective in identifying patients with preventable vision loss and directing them to physicians, especially in developing countries where there are fewer trained professionals and physicians are difficult to reach. When we consider the possibility that some future artificial intelligence systems may be candidates for moral/ethical status, certain ethical issues arise. Questions about moral/ethical status are important in some areas of applied ethics. Although it is accepted that current intelligence systems do not have moral/ethical status, it has yet to be determined what the exact the characteristics that confer moral/ethical status are or will be.

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Title: Artificial Intelligence in Medicine: Where Are We Now?

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Abstract: Artificial intelligence in medicine has made dramatic progress in recent years. However, much of this progress is seemingly scattered, lacking a cohesive structure for the discerning observer. In this article, we will provide an up-to-date review of artificial intelligence in medicine, with a specific focus on its application to radiology, pathology, ophthalmology, and dermatology. We will discuss a range of selected papers that illustrate the potential uses of artificial intelligence in a technologically advanced future.

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Title: Emotional intelligence and academic performance of students.

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Abstract: The medical profession deals with 'humanism' which involves interactions with people, the ability to think about them, care for them, and to provide positive reinforcement in clinical follow-ups. Emotional intelligence integrates the significant features of personal relationships to promote self-management skills, like adaptability, control of temperaments and reduction of tension, which can improve performance of individuals. This has led to increasing interest in the importance of emotional intelligence for effective academic growth, professional experiences and clinical practice. There are many studies

examining the correlation between emotional intelligence and academic achievement at different education levels, signifying its importance to predict students who need guided intervention. With proven relationship between emotional intelligence and academic success, the assessment of emotional intelligence can be introduced in entrance exams of medical schools to recognise students who might need directed intermediation. With the agreement of all stakeholders, emotional intelligence training workshops and awareness sessions can be introduced for educators and students.

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Citation: Am J Kidney Dis. 2019 Dec;74(6):803-810. doi: 10.1053/j.ajkd.2019.05.020. Epub 2019 Aug 23.

Title: Artificial Intelligence in Nephrology: Core Concepts, Clinical Applications, and Perspectives.

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Abstract: Artificial intelligence is playing an increasingly important role in many fields of medicine, assisting physicians in most steps of patient management. In nephrology, artificial intelligence can already be used to improve clinical care, hemodialysis prescriptions, and follow-up of transplant recipients. However, many nephrologists are still unfamiliar with the basic principles of medical artificial intelligence. This review seeks to provide an overview of medical artificial intelligence relevant to the practicing nephrologist, in all fields of nephrology. We define the core concepts of artificial intelligence and machine learning and cover the basics of the functioning of neural networks and deep learning. We also discuss the most recent clinical applications of artificial intelligence in nephrology and medicine; as an example, we describe how artificial intelligence can predict the occurrence of progressive immunoglobulin A nephropathy. Finally, we consider the future of artificial intelligence in clinical nephrology and its impact on medical practice, and conclude with a discussion of the ethical issues that the use of artificial intelligence raises in terms of clinical decision making, physician-patient relationship, patient privacy, and data collection.

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Title: Artificial intelligence in oral and maxillofacial radiology: what is currently possible?

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Abstract: Artificial intelligence, which has been actively applied in a broad range of industries in recent years, is an active area of interest for many researchers. Dentistry is no exception to this trend, and the applications of artificial intelligence are particularly promising in the field of oral and maxillofacial (OMF) radiology. Recent researches on artificial intelligence in OMF radiology have mainly used convolutional neural networks, which can perform image classification, detection, segmentation, registration, generation, and refinement. Artificial intelligence systems in this field have been developed for the purposes of radiographic diagnosis, image analysis, forensic dentistry, and image quality improvement. Tremendous amounts of data are needed to achieve good results, and involvement of OMF radiologist is essential for making accurate and consistent data sets, which is a time-consuming task. In order to widely use artificial intelligence in actual clinical practice in the future, there are lots of problems to be solved, such as building up a huge amount of fine-labeled open data set, understanding of the judgment criteria of artificial intelligence, and DICOM hacking threats using artificial intelligence. If solutions to these problems are presented with the development of artificial intelligence, artificial intelligence will develop further in the future and is expected to play an important role in the development of automatic diagnosis systems, the establishment of treatment plans, and the fabrication of treatment tools. OMF radiologists, as professionals who thoroughly understand the characteristics of radiographic images, will play a very important role in the development of artificial intelligence applications in this field.

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Title: Mandevillian intelligence.

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Abstract: Mandevillian intelligence is a specific form of collective intelligence in which individual cognitive vices (i.e., shortcomings, limitations, constraints and biases) are seen to play a positive functional role in yielding collective forms of cognitive success. The present paper introduces the concept of mandevillian intelligence and reviews a number of strands of empirical research that help to shed light on the phenomenon. The paper also attempts to highlight the value of the concept of mandevillian intelligence from a philosophical, scientific and engineering perspective. Inasmuch as we accept the notion of mandevillian intelligence, then it seems that the cognitive and epistemic value of a specific social or technological intervention will vary according to whether our attention is focused at the individual or collective level of analysis. This has a number of important implications for how we think about the design and evaluation of collective cognitive systems. For example, the notion of mandevillian intelligence forces us to take seriously the idea that the exploitation (or even the accentuation) of individual cognitive shortcomings could, in some situations, provide a productive route to collective forms of cognitive and epistemic success.

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Title: The impact of emotional intelligence in health care professionals on caring behaviour towards patients in clinical and long-term care settings: Findings from an integrative review.

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Abstract: **BACKGROUND:** Over recent years there has been criticism within the United Kingdom's health service regarding a lack of care and compassion, resulting in adverse outcomes for patients. The impact of emotional intelligence in staff on patient health care outcomes has been recently highlighted. Many recruiters now assess emotional intelligence as part of their selection process for health care staff. However, it has been argued that the importance of emotional intelligence in health care has been overestimated.

OBJECTIVES: To explore relationships between emotional intelligence in health care professionals, and caring behaviour. To further explore any additional factors related to emotional intelligence that may impact upon caring behaviour.

DESIGN: An integrative review design was used.

DATA SOURCES: Psychinfo, Medline, CINAHL Plus, Social Sciences Citation Index, Science Citation Index, and Scopus were searched for studies from 1995 to April 2017.

REVIEW METHODS: Studies providing quantitative or qualitative exploration of how any healthcare professionals' emotional intelligence is linked to caring in healthcare settings were selected.

RESULTS: Twenty two studies fulfilled the inclusion criteria. Three main types of health care professional were identified: nurses, nurse leaders, and physicians. Results indicated that the emotional intelligence of nurses was related to both physical and emotional caring, but emotional intelligence may be less relevant for nurse leaders and physicians. Age, experience, burnout, and job satisfaction may also be relevant factors for both caring and emotional intelligence.

CONCLUSIONS: This review provides evidence that developing emotional intelligence in nurses may positively impact upon certain caring behaviours, and that there may be differences within groups that warrant further investigation. Understanding more about which aspects of emotional intelligence are most relevant for intervention is important, and directions for further large scale research have been identified.

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Title: Communicating Intelligence Research.

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Abstract: Despite intelligence research being among the most replicable bodies of empirical findings—a Rosetta stone across the social sciences—the communication of intelligence research with non-intelligence researchers and the public remains a challenge, especially given ongoing public controversies throughout the history of the field. Hunt argued that "we have a communication problem." This article is a call for intelligence researchers to consider communication at multiple levels—communication with other intelligence researchers, communication with non-intelligence researchers, and communication with the public, defined here as policymakers, practitioners, students, and general readers. It discusses ongoing tensions between academic freedom and social responsibility and provides suggestions for thinking about communication and effective research translation and implementation of intelligence research from the frameworks of science and policy research communication. It concludes with some recommendations for effective communication and stresses the importance of incentivizing more scholars to responsibly seek to educate and engage with multiple publics about the science of intelligence.

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