SELECTED ABSTRACTS FROM PUBMED

1. ***Al-Dmour H, Masa'deh R, Salman A, Abuhashesh M, Al-Dmour R. Influence of Social Media Platforms on Public Health Protection Against the COVID-19 Pandemic via the Mediating Effects of Public Health Awareness and Behavioral Changes: Integrated Model. J Med Internet Res. 2020 Aug 19;22(8):e19996. doi: 10.2196/19996.***

ABSTRACT

Background: Despite the growing body of literature examining social media in health contexts, including public health communication, promotion, and surveillance, limited insight has been provided into how the utility of social media may vary depending on the particular public health objectives governing an intervention. For example, the extent to which social media platforms contribute to enhancing public health awareness and prevention during epidemic disease transmission is currently unknown. Doubtlessly, coronavirus disease (COVID-19) represents a great challenge at the global level, aggressively affecting large cities and public gatherings and thereby having substantial impacts on many health care systems worldwide as a result of its rapid spread. Each country has its capacity and reacts according to its perception of threat, economy, health care policy, and the health care system structure. Furthermore, we noted a lack of research focusing on the role of social media campaigns in public health awareness and public protection against the COVID-19 pandemic in Jordan as a developing country.

Objective: The purpose of this study was to examine the influence of social media platforms on public health protection against the COVID-19 pandemic via public health awareness and public health behavioral changes as mediating factors in Jordan.

Methods: A quantitative approach and several social media platforms were used to collect data via web questionnaires in Jordan, and a total of 2555 social media users were sampled. This study used structural equation modeling to analyze and verify the study variables.

Results: The main findings revealed that the use of social media platforms had a significant positive influence on public health protection against COVID-19 as a pandemic. Public health awareness and public health behavioral changes significantly acted as partial mediators in this relationship. Therefore, a better understanding of the effects of the use of social media interventions on public health protection against COVID-19 while taking public health awareness and behavioral changes into account as mediators should be helpful when developing any health promotion strategy plan.

Conclusions: Our findings suggest that the use of social media platforms can positively influence awareness of public health behavioral changes and public protection against COVID-19. Public health authorities may use social media platforms as an effective tool to increase public health awareness through dissemination of brief messages to targeted populations. However, more research is needed to validate how social media channels can be used to improve health knowledge and adoption of healthy behaviors in a cross-cultural context.

Keywords: COVID-19; Interventions; Jordan; awareness; behavior; behavioral change; coronavirus; pandemic; public health; public health protection; social media; social media platforms.

2. ***Rary E, Anderson SM, Philbrick BD, Suresh T, Burton J. Smart Sanitation-Biosensors as a Public Health Tool in Sanitation Infrastructure. Int J Environ Res Public Health. 2020 Jul 16;17(14):5146. doi: 10.3390/ijerph17145146.***

ABSTRACT

The health of individuals and communities is more interconnected than ever, and emergent technologies have the potential to improve public health monitoring at both the community and individual level. A systematic literature review of peer-reviewed and gray literature from 2000-present was conducted on the use of biosensors in sanitation infrastructure (such as toilets, sewage pipes and septic tanks) to assess individual and population health. 21 relevant papers were identified using PubMed, Embase, Global Health, CDC Stacks and NexisUni databases and a reflexive thematic analysis was conducted. Biosensors are being developed for a range of uses including monitoring illicit drug usage in communities, screening for viruses and diagnosing conditions such as diabetes. Most studies were nonrandomized, small-scale pilot or lab studies. Of the sanitation-related biosensors found in the literature, 11 gathered population-level data, seven provided real-time continuous data and 14 were noted to be more cost-effective than traditional surveillance methods. The most commonly discussed strength of these technologies was their ability to conduct rapid, on-site analysis. The findings demonstrate the potential of this emerging technology and the concept of Smart Sanitation to enhance health monitoring at the individual level (for diagnostics) as well as at the community level (for disease surveillance).

Keywords: biological sensor.; biosensor; global health; health sensor; sanitation; sewage; toilet; wastewater-based epidemiology.

3. ***Reddy SG. Population health, economics and ethics in the age of COVID-19. BMJ Glob Health. 2020 Jul;5(7):e003259. doi: 10.1136/bmjgh-2020-003259.***

ABSTRACT

Are the steps that have been taken to arrest the spread of COVID-19 justifiable? Specifically, are they likely to have improved public health understood according to widely used aggregate population health measures, such as Quality Adjusted Life Years (QALYs) and Disability Adjusted Life

Years (DALYs) as much or more than alternatives? This is a reasonable question, since such measures have been promoted extensively in global and national health policy by influential actors, and they have become almost synonymous with quantification of public health. If the steps taken against COVID-19 did not meet this test, then either the measures or the policies must be re-evaluated. There are indications that policies against COVID-19 may have been unbalanced and therefore not optimal. A balanced approach to protecting population health should be proportionate in its effects across distinct health concerns at a moment, across populations over time and across populations over space. These criteria provide a guide to designing and implementing policies that diminish harm from COVID-19 while also providing due attention to other threats to aggregate population health. They should shape future policies in response to this pandemic and others.

Keywords: health economics; health policy; indices of health and disease and standardisation of rates; public health.

4. ***Lewison G, Hussain SF, Guo P, Harding R, Mukherji D, Sittah GA, et al. Cancer research in the 57 Organisation of Islamic Cooperation (OIC) countries, 2008-17. Ecancermedicalscience. 2020 Aug 28;14:1094. doi: 10.3332/ecancer.2020.1094. eCollection 2020.***

ABSTRACT

Background and objectives: The 57 countries of the Organisation of Islamic Cooperation (OIC) are experiencing rapid increases in their burden of cancer. The First Ladies Against Cancer meeting at the 2016 OIC meeting in Istanbul committed to the importance of cancer control and the need for more evidence to support national cancer control planning (NCCP). Strong research systems are a crucial aspect of NCCP, but few data exist to support policy-makers across this political grouping.

Methodology: We identified all cancer research papers from OIC countries in the Web of Science from 2008 to 2017 with a filter based on journal names and title words, with high precision and recall. We analysed the country outputs, the cancer sites investigated, the types of research, sources of funding and the citations to the papers.

Results: There were 49,712 cancer research papers over this period. The leading countries in terms of output were Turkey, Iran, Egypt and Malaysia, but the most cited papers were from Qatar, Indonesia and Saudi Arabia. International collaboration was low, except in Qatar and the United Arab Emirates. The site-specific cancers accounting for most research were breast and blood, correlating with their disease burden in the OIC countries, but lung, cervical and oesophageal cancers were relatively under-researched. Most funding from within the OIC countries was from their own university sector.

Conclusion: Cancer is seriously under-researched in most of the OIC countries. This will undermine the ability of these countries and OIC as a whole to deliver on better cancer control for their populations. New policies, OIC leadership and funding are urgently needed to address this situation.

Keywords: Organisation of Islamic Cooperation; cancer anatomical sites; cancer research; citations; funding; research types.

5. ***Turner NC, Kingston B, Kilburn LS, Kernaghan S, Wardley AM, Macpherson IR, et al. Circulating tumour DNA analysis to direct therapy in advanced breast cancer (plasmaMATCH): a multicentre, multicohort, phase 2a, platform trial. Lancet Oncol. 2020 Oct;21(10):1296-1308. doi: 10.1016/S1470-2045(20)30444-7. Epub 2020 Sep 10.***

ABSTRACT

Background: Circulating tumour DNA (ctDNA) testing might provide a current assessment of the genomic profile of advanced cancer, without the need to repeat tumour biopsy. We aimed to assess the accuracy of ctDNA testing in advanced breast cancer and the ability of ctDNA testing to select patients for mutation-directed therapy.

Methods: We did an open-label, multicohort, phase 2a, platform trial of ctDNA testing in 18 UK hospitals. Participants were women (aged ≥18 years) with histologically confirmed advanced breast cancer and an Eastern Cooperative Oncology Group performance status 0-2. Patients had completed at least one previous line of treatment for advanced breast cancer or relapsed within 12 months of neoadjuvant or adjuvant chemotherapy. Patients were recruited into four parallel treatment cohorts matched to mutations identified in ctDNA: cohort A comprised patients with ESR1 mutations (treated with intramuscular extended-dose fulvestrant 500 mg); cohort B comprised patients with HER2 mutations (treated with oral neratinib 240 mg, and if oestrogen receptor-positive with intramuscular standard-dose fulvestrant); cohort C comprised patients with AKT1 mutations and oestrogen receptor-positive cancer (treated with oral capivasertib 400 mg plus intramuscular standard-dose fulvestrant); and cohort D comprised patients with AKT1 mutations and oestrogen receptor-negative cancer or PTEN mutation (treated with oral capivasertib 480 mg). Each cohort had a primary endpoint of confirmed objective response rate. For cohort A, 13 or more responses among 78 evaluable patients were required to infer activity and three or more among 16 were required for cohorts B, C, and D. Recruitment to all cohorts is complete and long-term follow-up is ongoing. This trial is registered with ClinicalTrials.gov, NCT03182634; the European Clinical Trials database, EudraCT2015-003735-36; and the ISRCTN registry, ISRCTN16945804.

Findings: Between Dec 21, 2016, and April 26, 2019, 1051 patients registered for the study, with ctDNA results available for 1034 patients. Agreement between ctDNA

digital PCR and targeted sequencing was 96-99% (n=800, kappa 0·89-0·93). Sensitivity of digital PCR ctDNA testing for mutations identified in tissue sequencing was 93% (95% CI 83-98) overall and 98% (87-100) with contemporaneous biopsies. In all cohorts, combined median follow-up was 14·4 months (IQR 7·0-23·7). Cohorts B and C met or exceeded the target number of responses, with five (25% [95% CI 9-49]) of 20 patients in cohort B and four (22% [6-48]) of 18 patients in cohort C having a response. Cohorts A and D did not reach the target number of responses, with six (8% [95% CI 3-17]) of 74 in cohort A and two (11% [1-33]) of 19 patients in cohort D having a response. The most common grade 3-4 adverse events were raised gamma-glutamyltransferase (13 [16%] of 80 patients; cohort A); diarrhoea (four [25%] of 20; cohort B); fatigue (four [22%] of 18; cohort C); and rash (five [26%] of 19; cohort D). 17 serious adverse reactions occurred in 11 patients, and there was one treatment-related death caused by grade 4 dyspnoea (in cohort C).

Interpretation: ctDNA testing offers accurate, rapid genotyping that enables the selection of mutation-directed therapies for patients with breast cancer, with sufficient clinical validity for adoption into routine clinical practice. Our results demonstrate clinically relevant activity of targeted therapies against rare HER2 and AKT1 mutations, confirming these mutations could be targetable for breast cancer treatment.

Funding: Cancer Research UK, AstraZeneca, and Puma Biotechnology.

6. ***Chowdhury D, Hope KD, Arthur LC, Weinberger SM, Ronai C, Johnson JN, et al. Telehealth for Pediatric Cardiology Practitioners in the Time of COVID-19. Pediatr Cardiol. 2020 Aug;41(6):1081-1091. doi: 10.1007/s00246-020-02411-1. Epub 2020 Jul 12.***

ABSTRACT

Due to the COVID-19 pandemic, there has been an increased interest in telehealth as a means of providing care for children by a pediatric cardiologist. In this article, we provide an overview of telehealth utilization as an extension of current pediatric cardiology practices and provide some insight into the rapid shift made to quickly implement these telehealth services into our everyday practices due to COVID-19 personal distancing requirements. Our panel will review helpful tips into the selection of appropriate patient populations and specific cardiac diagnoses for telehealth that put patient and family safety concerns first. Numerous practical considerations in conducting a telehealth visit must be taken into account to ensure optimal use of this technology. The use of adapted staffing and billing models and expanded means of remote monitoring will aid in the incorporation of telehealth into more widespread pediatric cardiology practice. Future directions to sustain this platform include the refinement of telehealth care strategies, defining best practices, including telehealth in the fellowship curriculum and continuing advocacy for technology.

Keywords: Pediatric cardiology; Remote monitoring; Telehealth; Telemedicine.

7. ***Pessoa-Amorim G, Camm CF, Gajendragadkar P, De Maria GL, Arsac C, Laroche C, et al. Admission of patients with STEMI since the outbreak of the COVID-19 pandemic: a survey by the European Society of Cardiology. Eur Heart J Qual Care Clin Outcomes. 2020 Jul 1;6(3):210-216. doi: 10.1093/ehjqcco/qcaa046.***

ABSTRACT

Aims: The COVID-19 pandemic required a significant redeployment of worldwide healthcare resources. Fear of infection, national lockdowns and altered healthcare priorities have the potential to impact utilisation of healthcare resources for non-communicable diseases. To survey health professionals' views of the impact of the COVID-19 pandemic on the rate and timing of admission of patients with ST-elevation myocardial infarction (STEMI), the European Society of Cardiology (ESC) administered an internet-based questionnaire to cardiologists and cardiovascular nurses across 6 continents.

Methods and results: 3101 responses were received from 141 countries across 6 continents. 88.3% responded that their country was in "total lockdown" and 7.1% in partial lockdown. 78.8% responded that the number of patients presenting with STEMI was reduced since the coronavirus outbreak and 65.2% indicated that the reduction in STEMI presentations was >40%. Approximately 60% of all respondents reported that STEMI patients presented later than usual and 58.5% that >40% of STEMI patients admitted to hospital presented beyond the optimal window for primary percutaneous intervention (PCI) or thrombolysis. Independent predictors of the reported higher rate of delayed STEMI presentation were a country in total lockdown, >100 COVID-19 cases admitted locally, and the complete restructuring of the local cardiology service.

Conclusion: The survey indicates that the impact of COVID-19 on STEMI presentations is likely to be substantial, with both lower presentations and a higher rate of delayed presentations occurring. This has potentially important ramifications for future healthcare and policy planning in the event of further waves of this pandemic.

Keywords: COVID-19; European Society of Cardiology; ST-elevation myocardial infarction.

8. ***Fersia O, Sue Bryant S, Nicholson R, McMeeken K, Brown C, Donaldson B, et al. The impact of the COVID-19 pandemic on cardiology services. Open Heart. 2020 Aug;7(2):e001359. doi: 10.1136/openhrt-2020-001359.***

ABSTRACT

Objective: The COVID-19 pandemic resulted in prioritisation of National Health Service (NHS) resources to cope with the surge in infected patients. However, there

have been no studies in the UK looking at the effect of the COVID-19 work pattern on the provision of cardiology services. We aimed to assess the impact of the pandemic on cardiology services and clinical activity.

Methods: We analysed key performance indicators in cardiology services in a single centre in the UK in the periods prior to and during lockdown to assess reduction or changes in service provision.

Results: There has been a greater than 50% drop in the number of patients presenting to cardiology and those diagnosed with myocardial infarction. All areas of cardiology service provision sustained significant reductions, which included outpatient clinics, investigations, procedures and cardiology community services such as heart failure and cardiac rehabilitation.

Conclusions: As ischaemic heart disease continues to be the leading cause of death nationally and globally, cardiology services need to prepare for a significant increase in workload in the recovery phase and develop new pathways to urgently help those adversely affected by the changes in service provision.

Keywords: cardiac rehabilitation; coronary artery disease; delivery of care; heart failure.

9. ***Sahi PK, Mishra D, Singh T. Medical Education Amid the COVID-19 Pandemic. Indian Pediatr. 2020 Jul 15;57(7):652-657. doi: 10.1007/s13312-020-1894-7. Epub 2020 May 14.***

ABSTRACT

The coronavirus pandemic has shaken the mankind to its core. Social distancing is the most important preventive strategy for the spread of this contagion, short of a vaccine. Implementation of the same has forced many countries in to a complete lock-down. Closure of schools and universities has made education uncertain at all levels. Medical education is no exception. In this pandemic, the need for uninterrupted generation of future doctors is felt more than ever in our living memory. Continuity of medical education is thus imperative. While "Live" patient contact is an irreplaceable tenet of clinical teaching, these extraordinary times demand exceptional measures. Pedagogical innovations involving technology and simulation based teaching (Online lectures, video case vignettes, virtual simulators, webcasting, online chat-rooms) need to be brought to the forefront. Since the medical educators have been pushed inevitably to rely on technology-based learning, they should not only embrace it but also develop and evaluate its sustainability and application in preclinical and clinical setting. Meanwhile, the students, whose medical education is stuck in this pandemic time, should realize that there is no better teacher than a first-hand experience, and they are eyewitnesses to the making of history.

10. ***Guadix SW, Winston GM, Chae JK, Haghdel A, Chen J, Younus I, et al. Medical Student Concerns Relating to Neurosurgery Education During COVID-19. World Neurosurg. 2020 Jul;139:e836-e847. doi: 10.1016/j.wneu.2020.05.090. Epub 2020 May 16.***

ABSTRACT

Background: The coronavirus disease 2019 (COVID-19) pandemic has created significant obstacles within medical education. For medical students interested in pursuing neurosurgery as a specialty, the educational policies surrounding COVID-19 have resulted in unique challenges. The present study used a nationwide survey to identify the concerns of medical students interested in pursuing neurosurgery during the COVID-19 pandemic.

Methods: Students who had previously registered for medical student neurosurgery training camps were sent an online Qualtrics survey requesting them to assess how the COVID-19 pandemic was affecting their neurosurgical education. The Pearson $\chi 2$ test and post hoc pairwise Fisher exact test were used for analysis of categorical variables, and the 2-tailed paired Student t test was used for continuous variables.

Results: The survey was distributed to 852 medical students, with 127 analyzed responses. Concerns regarding conferences and networking opportunities (63%), clinical experience (59%), and board examination scores (42%) were most frequently cited. Of the third-year medical students, 76% reported ≥ 1 cancelled or postponed neurosurgery rotation. On average, students were more likely to take 1 year off from medical school after than before the start of the COVID-19 pandemic, measured from 0 to 100 (25.3 ± 36.0 vs. 39.5 ± 37.5; $P = 0.004$). Virtual mentorship pairing was the highest rated educational intervention suggested by first- and second-year medical students. The third- and fourth-year medical students had cited virtual surgical skills workshops most frequently.

Conclusions: The results from the present nationwide survey have highlighted the concerns of medical students regarding their neurosurgery education during the COVID-19 pandemic. With these findings, neurosurgery organizations can consider targeted plans for students of each year to continue their education and development.

Keywords: COVID-19; Concerns; Education; Medical student; Neurosurgery; Residency; Training camp.