Ethnic differences in cognition and age in people diagnosed with dementia

A study of individuals diagnosed with dementia in the UK found that people from minority ethnic backgrounds (Asian and black patients) had lower cognitive scores and were younger when they were diagnosed with dementia than white patients (https://doi.org/10.1002/gps.5046).

The study included 9380 white patients, 642 Asian patients and 2008 black patients who were diagnosed with dementia in two London mental health trusts between 2008 and 2016.

'This study is the first to investigate age and cognitive impairment at the time of dementia diagnosis in south Asians. The earlier age at diagnosis indicates that dementia prevalence in south Asians is likely to be higher in this group than in the white British population,' said lead author Dr. Naaheed Mukadam, of University College London.

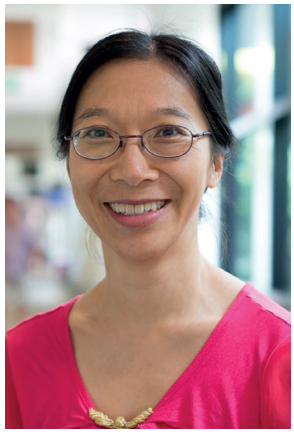
The authors noted that there is a need to understand these inequalities to see if dementia prevention initiatives should be tailored by ethnic group.

Virtual reality could help patients scared of needles or pain

In a small study from the USA, nine patients were provided with virtual reality headsets during minor procedures that would normally be painful and may require local anaesthetic (https://doi.org/10.1111/bjd.17682).

The patients were cleaned and prepped as standard, and then fitted with a virtual reality system. After a few minutes of use, the procedure was commenced. Upon completion, each patient was asked about their experience and level of pain and the clinician gave a score based upon the patients' reactions.

All participants in the study reported that they experienced minimal pain, with half experiencing no pain at all, and all reported finding the technology simple to use.



Dr Rhea Liang, General and Breast Surgeon, Robina Hospital, Gold Coast Hospital and Health Service, Robina, Australia

Why women leave surgical training: a qualitative study

A qualitative study analysed interviews with 12 women who had chosen to leave surgical training. Supported by male and female co-researchers, and in dialogue with study participants, the findings were coded and themes defined (Liang et al, 2019). An explanatory model was developed by integrating findings with different theories and previous literature.

The time spent in training ranged from 6 months to 4 years. The findings confirmed factors identified in earlier reports as reasons women leave surgical training, and contributed six new factors: unavailability of leave, a distinction between valid and invalid reasons for leave, poor mental health, absence of interactions with the women in surgery section of their professional body and other supports, fear of repercussion, and lack of pathways for independent and specific support.

Commenting on the finding, Dr Rhea Liang, General and Breast Surgeon, Robina Hospital, Gold Coast Hospital and Health Service, Robina, Australia, said: 'This research has important implications for how we approach issues of inequity. Firstly, by recognising that factors act cumulatively, we understand that more coordinated, broad-based and multifactorial interventions are required. In designing these interventions, we need to be alert to unexpected negative effects such as inadvertently isolating or objectifying the subject of the intervention. And lastly, the finding that small actions can either topple or support the tower of blocks reminds us all as individuals to act respectfully and kindly to each other, to look out for colleagues in distress and to reach out.'

Liang R, Dornan T, Nestel D. Why do women leave surgical training? A qualitative and feminist study. Lancet. 2019 Feb 9;393(10171):541–549. https://doi.org/10.1016/S0140-6736(18)32612-6

Tongue microbiome could help identify patients with early-stage pancreatic cancer

Differences in the abundance of certain bacteria living on the tongue can distinguish patients with early pancreatic cancers from healthy individuals (Lu et al, 2019).

In the first study to characterize the tongue coat microbiome of patients with pancreatic cancer, researchers recruited 30 patients with early-stage disease (a tumour in the head of the pancreas) and a control group of 25 healthy people. Participants were between 45 and 65 years in age, had no other diseases or oral health problems, and had not taken any antibiotics or other drugs for the 3 months before the study.

The team used gene sequencing technologies to examine the microbiome diversity of tongue coat samples, finding that patients who had pancreatic cancer were colonized by remarkably different tongue coating microbiomes compared to healthy individuals.

Lead author Dr Lanjuan Li of Zhenjiang University, China, said: 'Although further confirmatory studies are needed, our results add to the growing evidence of an association between disruptions to the microbiome and pancreatic cancer.'

The abundance of four types of bacteria – low levels of *Haemophilus* and *Porphyromonas* and high levels of *Leptotrichia* and *Fusobacterium* – could distinguish patients with pancreatic cancer from healthy individuals.

'If an association between the discriminatory bacteria and pancreatic cancer is confirmed in larger studies, this could potentially lead to the development of new microbiome-based early diagnostic or preventive tools for the disease,' said Dr Li.

Lu H, Ren Z, Li A et al. Tongue coating microbiome data distinguish patients with pancreatic head cancer from healthy controls. J Oral Microbiol. 2019 Jan 28;11(1):1563409. https://doi.org/10.1080/20002297.2018.1563409

Impact of scribes on emergency doctors' productivity and patient throughput

A randomized, multicentre clinical trial was carried out in five emergency departments in Victoria, Australia, to evaluate the changes in productivity when scribes were used by emergency physicians in emergency departments in Australia and assess the effect of scribes on throughput (Walker et al, 2019).

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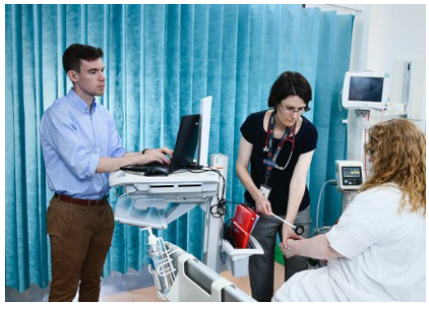

Mr Lachlan Hegarty, scribe, and Associate Professor Katie Walker, Cabrini Emergency Department, Melbourne

A total of 88 physicians worked their routine shifts and were randomly allocated a scribe for the duration of their shift. Data were collected from 589 scribed shifts (5098 patients) and 3296 non-scribed shifts (23 838 patients). Scribes increased physicians' productivity (a 15.9% gain) and primary consultations increased from 0.83 to 1.04 patients per hour per doctor (a 25.6% gain). No change was seen in door-to-doctor time. Median length of stay reduced from 192 minutes to 173 minutes, representing a 19-minute reduction (P<0.001). The greatest gains were achieved by placing scribes with senior doctors at triage, the least by using them in sub-acute or fast track regions. No significant harm involving scribes was reported.

Commenting on the findings, Associate Professor Katie Walker at Cabrini Emergency Department, Melbourne, highlighted: 'Doctors like scribes, patients don't mind if scribes are in the consultation, scribes love the job and learn tremendous amounts and the role is safe. In addition implementing scribes can be quick (4–6 months per site in our study) and the role was cost-effective in Australia. Until our IT systems improve in a major way, this is how doctors can return to patient care.'

Walker K, Ben-Meir M, Dunlop W et al. Impact of scribes on emergency medicine doctors' productivity and patient throughput: multicentre randomised trial. BMJ. 2019 Jan 30;364:l121. https://doi.org/10.1136/bmj.l121

Exercise in morning or afternoon to help counter the effects of shift work and jet lag

Exercise can shift the human body clock, with the direction and amount of this effect depending on the time of day or night in which people exercise (Youngstedt et al, 2019). These findings suggest that exercise could counter the effects of jet lag, shift work and other disruptions to the body's internal clock, helping individuals adjust to shifted schedules.

Researchers examined body clocks following exercise in 101 participants for up to 5.5 days. The baseline timing of each participant's body clock was determined by measuring the time of the evening rise and the peak in melatonin. Participants then walked or ran on a treadmill at a moderate intensity for 1 hour per day for three consecutive days. They exercised at one of eight different times of day or night (each individual exercised at the same time on all three days or nights). The timing of the body clock was re-assessed after the third exercise session.

The study found that exercising at 7 am or between 1 and 4 pm advanced the body clock to an earlier time, and exercising between 7 and 10 pm delayed the body clock to a later time. Exercising between 1 and 4 am and at 10 am had little effect on the body clock, and the phase-shifting effects of exercise did not differ based on age nor gender.

First author Shawn Youngstedt, from the College of Nursing and Health Innovation and College of Health Solutions, Arizona State University, Phoenix, Arizona, said: 'We were able to clearly show in this study when exercise delays the body clock and when it advances it. This is the first study to compare exercise's effects on the body clock, and could open up the possibility of using exercise to help counter the negative effects of jet lag and shift work.'

Youngstedt SD, Elliott JA, Kripke DF. Human circadian phase-response curves for exercise. J Physiol. 2019 Feb 19. https://doi.org/10.1113/JP276943

Global study finds high success rate for hip and knee replacements

A total of 183 case series were reviewed relating to hip (https://doi.org/10.1016/S0140-6736(18)31665-9) and knee replacements (https://doi.org/10.1016/S0140-6736(18)32531-5), as well as six national joint replacement registries. Of the total hip replacements, 89% lasted 15 years, 70% lasted 20 years, and 58% lasted 25 years, while 82% of total knee replacements and 70% of unicondylar knee replacements lasted 25 years.

No overall increased risk of cancer in children born after fertility treatment

Children born after assisted reproductive technology do not appear to be at greater risk of developing cancer than other children, according a study of 47 690 children followed for a median of 21 years (https://doi.org/10.1093/humrep/dey394).

Hospital admissions as a result of alcohol in 2017–18

Statistics on Alcohol, England 2019 (https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-alcohol/2019) reveal that there were 338 000 admissions to hospital in 2017–18 where the main cause was related to drinking alcohol, similar to 2016–17 and 15% higher than a decade ago. Alcohol-related admissions account for a similar percentage of overall hospital admissions.

Effects of withholding parenteral nutrition for 1 week in the paediatric intensive care unit

The paediatric early *vs* late parenteral nutrition in critical illness trial showed that, compared with early parenteral nutrition, withholding supplemental parenteral nutrition for 1 week in the paediatric intensive care unit reduced infections and accelerated recovery from critical illness in children.

A preplanned 2-year follow up (https://doi.org/10.1016/S2213-2600(18)30334-5) investigated the long-term impact on physical and neurocognitive development of early *vs* late parenteral nutrition. A total of 786 patients and 405 healthy control children underwent long-term outcome testing, and were included in subsequent multivariable analyses. Late parenteral nutrition did not adversely affect anthropometric data, health status or neurological functioning, and improved executive functioning, externalising behavioural problems and visual-motor integration.

The authors concluded that withholding early parenteral nutrition for 1 week in the paediatric intensive care unit did not negatively affect survival, anthropometrics, health status or neurocognitive development, and improved inhibitory control 2 years after paediatric intensive care unit admission.

Biologic therapy for severe psoriasis associated with favourable modulation of coronary plaque indices

Anti-inflammatory biologic drugs used to treat severe psoriasis have the potential to prevent heart disease in patients with the skin condition, according to new research (Elnabawi et al, 2019).

Patients with severe psoriasis are at twice the risk of having a first heart attack at 40–50 years of age. This study investigated whether treating severe psoriasis with a biologic could improve the health of the coronary arteries.

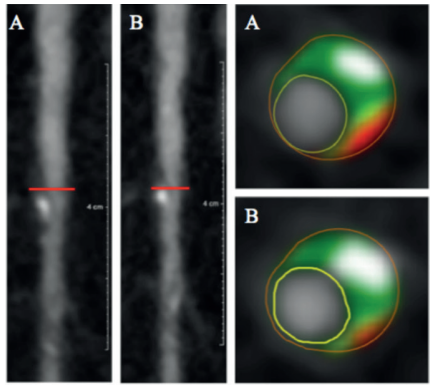

Figure 1. Longitudinal and cross section views of the left anterior descending artery (a) at baseline before treatment with biologic therapy and (b) after 1 year of biologic therapy.

The observational study included 121 patients with severe psoriasis who qualified for biologic treatment: 89 took biological therapy (anti-tumour necrosis factor, anti-interleukin 12/23 or anti-interleukin 17) and 32 used topical treatment. All patients underwent computed tomography angiography at baseline and 1 year later to assess the amount and characteristics of plaques.

Patients with severe psoriasis who took biologic therapy for 1 year had an 8% reduction in total and non-calcified coronary plaque burden (*Figure 1*) – similar to the effect of a low dose statin – and the make-up of coronary plaques also improved in these patients. Coronary plaque burden increased by 2% in those patients who did not take a biologic.

'Psoriasis severity is related to the burden of coronary disease – our findings suggest treating the psoriasis may potentially benefit coronary heart disease,' said study author Dr Nehal Mehta, Chief of Inflammation and Cardiometabolic Diseases at the National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland, USA.

He continued: 'This preliminary study provides the first evidence that biologic therapy is associated with coronary plaque reduction and stabilisation, and provides strong rationale for conduct of a randomised trial testing the impact of biologic therapy on the progression of coronary disease in patients with psoriasis.'

Elnabawi YA, Dey AK, Goyal A et al. Coronary artery plaque characteristics and treatment with biologic therapy in severe psoriasis: results from a prospective observational study. Cardiovasc Res. 2019 Feb 5. https://doi.org/10.1093/cvr/cvz009

Blindfolded training could help improve doctors' leadership skills

In a simulation training study (Buyck et al, 2019), paediatric team leaders who wore a blindfold improved their leadership skills ratings over the course of three resuscitation scenarios compared to non-blindfolded leaders. The findings demonstrate a promising tool for improving training and outcomes in paediatric resuscitation.

Twelve teams – each composed of one paediatric emergency fellow, one paediatric resident and two paediatric emergency nurses – were randomly assigned to either the blindfold group or the control group.

All teams participated in one session of five simulation-based resuscitation scenarios. Team leaders in the blindfold group wore a blindfold for simulations 2, 3 and 4. Simulations 1 and 5 were assessed by three expert evaluators blinded to the group allocation, who rated leadership skills using a standardized objective scale.

Leadership score did not differ significantly between the two groups after simulation 1, and rose significantly more in the blindfold group than the control group at the end of simulation 5: 11.4% *vs* 5.4%. The blindfolded group had no increase in stress or decrease in satisfaction.

The authors felt that at least part of the effect of blindfolding on leadership skills could be the result of an improvement in communication by the team as a whole – lead author Dr Michael Buyck of the Geneva University Children's Hospital, Switzerland explained: 'Having a blindfolded leader requires other team members to verbalize all the important data and explicitly acknowledge instructions.'

Buyck M, Manzano S, Haddad K, Moncousin A-C, Galetto-Lacour A, Blondon K, Karam O. Effects of blindfold on leadership in pediatric resuscitation simulation: a randomized trial. Front Pediatr. 2019 14 Feb. https://doi.org/10.3389/fped.2019.00010

Early noradrenaline may stabilize shock faster in patients with sepsis and low blood pressure

Patients with septic shock who were treated with noradrenaline earlier than patients receiving standard care were more likely to have their blood pressure and shock stabilized within 6 hours of diagnosis, according to a randomized, double-blind, controlled trial (Permpikul et al, 2019).

A total of 310 adults who received a diagnosis of sepsis with hypotension in the emergency room of Siriraj Hospital in Bangkok, Thailand were randomly assigned to receive either early low-dose (0.05 µg/kg/min) noradrenaline or standard treatment. In the early intervention arm, the median time from diagnosis to noradrenaline administration was 93 minutes, while in the standard therapy arm, it was 192 minutes.

The primary outcome was shock control rate, which was a combination of achieving a mean arterial blood pressure of >65 mmHg and either a small reduction in lactate or adequate urine output, by 6 hours. A secondary outcome was 28-day mortality.

The study found that the shock control rate within 6 hours was significantly higher in the intervention arm: 76.1% *vs* 48.4%, and the median time to shock control was significantly shorter in the intervention arm: 4.45 hours *vs* 6.02 hours. There was no statistical difference in 28-day mortality between the study arms.

Lower rates of congestive heart failure and new-onset arrhythmia were seen in those in the intervention arm, but the groups had similar rates of respiratory failure requiring ventilator support and renal failure requiring dialysis.

The authors noted the concern that early use of noradrenaline could lead to vasoconstriction of abdominal organs leading to splanchnic hypoperfusion. Although this was not measured directly, there was no difference in the prevalence of organ failure between the two groups.

Study limitations include the fact it was conducted at a single hospital, resuscitation fluid rates were not standardized and not all patients were treated in the intensive care unit. The authors emphasize that physicians wanting to apply these results to their own practice 'should carefully evaluate the context of this study and compare it with their own situation and setting.'

Permpikul C, Tongyoo S, Viarasilpa T, Trainarongsakul T, Chakorn T, Udompanturak S. Early use of norepinephrine in septic shock resuscitation (CENSER): a randomized trial. Am J Respir Crit Care Med. 2019 Feb 1. https://doi.org/10.1164/rccm.201806-1034OC

Young people in the UK let down on long-term illness

Young people in the UK are making healthier life choices for themselves than before, but are more likely to die from asthma or have a poor quality of life from long-term conditions compared to counterparts in other high-income countries.

This is according to the first ever international comparison of young people's health measures over time, comparing the UK to 18 other high-income countries, published by the Nuffield Trust and the Association for Young People's Health (https://www.nuffieldtrust.org.uk/files/2019-02/1550657729_nt-ayph-adolescent-health-report-web.pdf).

The report is based on analysis of 17 measures of the health and wellbeing of young people, aged 10–24 years, between the mid-1990s and the last year for which data are comparable. The indicators examined include long-standing illnesses, alcohol consumption, cancer mortality, obesity and deprivation.

The UK sits in the bottom third of the comparative countries in nine out of 17 indicators, and in the top third in three. In four out of 17 indicators, trends over time have been getting worse, and in five areas previous improvements have stalled.

Report finds variable standards of health screening

A new report, *Investigation into the management of health screening* (https://www.nao.org.uk/wp-content/uploads/2019/01/Investigation-into-the-management-of-health-screening.pdf), from the National Audit Office, has found that the proportion of eligible adults receiving health screening is inconsistent across different areas in England and that services are not operating to the 'agreed standards'.

All the screening programmes investigated failed to meet the 'standard' target for the percentage of eligible people attending screening appointments in 2017–18. However, the bowel screening programme nearly achieved the target (60%) with coverage of 59.6%. For the first time in 2017–18, the Department of Health and Social Care also set a 'lower threshold' target, which all, except for the cervical programme, met. The cervical programme achieved coverage of 72% against a standard target of 80% and a lower threshold of 75%.

There is considerable variation in the percentage of people screened between different local areas. The National Audit Office's analysis shows that levels of coverage across the four screening programmes are inconsistent, with much of the lowest performance in London.

All the screening programmes looked at rely on a national database of GP registrations to identify those who are eligible for screening, but this database is not fit for purpose and increases the risk that some people may not be invited for screening.

Commenting on the report, Dr Paul Cross, President of the British Association for Cytopathology, said, 'Many of these problems are well known within the cervical screening programme, and although highlighted by the National Audit Office report, need addressing urgently. All laboratory staff want to ensure we move forward to deliver the quality and timely service women expect, and laboratory staff want to achieve.'