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Kaleidoscope

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In March, the Editor-in-Chief of the *Journal of the American Medical Association (JAMA)* was placed on leave after a deputy editor's podcast downplayed structural racism in medicine and the journal tweeted 'No physician is racist, so how can there be structural racism in healthcare?' Since then the UK's Commission on Race and Ethnic Disparities' report[1] has been challenged, including by the Royal College of Psychiatrists,[2] for stating there is no systemic racism in this country. The National Health Service has been noted to have 'snowy white peaks' at the top end of senior clinicians and management, and it is clear that we need to get our own houses in order. The key drivers lie in the availability of high-quality data that can be used to inform change; the opinion and discussion reflects the different approaches to the interpretation of that data. Writing in the *New England Journal of Medicine*, Rotenstein et al highlight the discrepancy between current US medical school entrant ethnicity data – 3.6% Black, 3.3% Hispanic or Latinx and 0.1% American Indian or Alaskan Native – against the broader population representation of 13.4% Black, 18.5% Hispanic or Latinx, and 1.3% American Indian or Alaskan Native.[3] They note how women physicians account for just over half graduating classes, but 5.5% of full professors, and White medical students have been shown to hold biased views on, for example, race-based differences in pain perception that have an impact on their treatment recommendations. In addition to being contrary to prevailing principles of morality and equity of care, this is adversely having an impact on patient outcomes and workforce retention. Change is needed, and they propose a quality-improvement framework to address workforce diversity. The authors call for reporting of disaggregated data on workforce diversity and experience to management boards, with an explicit aim of pursuing diversity as a common shared goal across the entire workforce. Examples include looking at existing staff diversity, the number of minority and women candidates interviewed for each position, especially in more senior roles, promotion and retention data, pay equity and job satisfaction. Areas of notable difference or failure to change will need specific attention and drive. It also needs dedicated space for organisations to publish their data publicly (of note, we have recently published author gender differences in accepted manuscripts in the *BJPsych*).[4]

The United Nation's sustainable development goals (https://sdgs.un.org/goals) represent a call for global action and a roadmap toward peace and prosperity. Built on a foundation of 17 specific focal areas, tracking progress has resulted in some conflicting measurements. Years of good life (YoGL), a singular and comprehensive assessment of life worth living, has been put forward as a potential solution to cut through the noise.[5] More than just mortality and morbidity rates, YoGL attempts to represent 'survival in an empowered condition'. Using the foundation of life expectancy, it employs thresholds for poverty, physical and cognitive well-being, and life satisfaction – and only supra-threshold time assessed on objective and subjective measures is counted as a positive. YoGL delivers a single number with an absolute value that can be compared across time points and populations, as well as within defined subpopulations. The richness of the data tell a story that can easily be glossed over with standard measures, for example, although women have an overall longer life expectancy than men they have significantly less YoGL in most low-income countries,

acknowledging gender disparities that have an impact on their health and well-being. Looking across time, the individual factors can help pinpoint the source of any gains or losses – offering a target for resource and policy intervention. In India, life expectancy for women has gone up by 3 years, but YoGL has risen by 8 years and can be largely attributed to reduced poverty over a 20-year period. Currently, not all national surveys deliver the required data for YoGL calculation, but there is an argument that they should. As in every attempt to distil the human experience into a single number, there are issues with the YoGL, it also brings advantages in offering a standardised metric that can be used to assess the sustainability and effectiveness of projects, assisting decision-making and policy. One might imagine a world where the proposal for an infrastructure project like a 25-mile undersea tunnel connecting Scotland to Northern Ireland would come not only with economic costs, but a predicted measure for the impact it would have on human well-being. Although only a first step, YoGL proposes to normalise the factoring of meaningful social costs into governmental and industrial decision-making around sustainable development, ensuring that the ultimate goal of quality human life is not lost in the shuffle.

Brain volume loss is a relatively robust finding in psychoses, with some concern that medication may be a contributory factor. Brain changes in psychosis were identified long before the era of antipsychotics, but such early work does not meet contemporary methodological rigour, and there are more recent data supporting an association between cumulative medication dose and total volume losses. However, it is very difficult to determine causality as we seldom have cohorts of individuals with psychosis who are not on active treatment. There could be confounding by indication, with those with the most severe illnesses putatively most likely to have brain changes, also most likely to end up on the 'most' medication. Conversely, rodent work supports medications being neuroprotective, but the generalisability to humans can equally be challenged. Chopra et al's work is a welcomed addition to the literature, with 62 medication-naive individuals with first-episode psychoses randomised (in a triple-masked manner) to receive either an atypical antipsychotic (risperidone or paliperidone) or placebo pill for 6 months, while simultaneously all received intense psychosocial therapy.[6] At 3 months, compared with a third group of healthy controls, those on medication showed significant increased brain volume, notably in the pallidum, whereas those on placebo showed decreased volumes. Across the entire patient group, pallidal grey matter volume was positively correlated with greater reductions in symptom severity. These findings support the premise that antipsychotics do not cause loss of brain volume in this time frame but rather appear neuroprotective and promote growth. They also throw a spotlight on the basal ganglia in terms of the treatment of psychoses. The pallidum is part of the striatum, and the authors note both that dysfunctional fronto-striato-thalamic circuitry has repeatedly been shown in psychoses, and also that this is significantly modulated by dopamine. Of note, there were no significant changes in volume between groups at 12 months, and at 6 months the placebo group was symptomatically non-inferior. Possible explanations proposed include that medication might be superior in early stages of treatment and that the psychosocial intervention might be producing gains not directly indexed by changes in brain volume.

There is gold-rush excitement about the potential of therapeutically repurposing illicit drugs such as ketamine, psilocybin, MDMA (3,4-methylenedioxymethamphetamine) and cannabis. This debate intertwines unmet need and illness burden, the limitations of existing treatments, and an active political and societal

debate reflected in legislation. The enthusiasm needs to be balanced by good-quality science, and last month's Kaleidoscope noted the failure of microdosing lysergic acid diethylamide (LSD) to improve perceived well-being above placebo. This month, Bonn-Miller et al explore the impact of smoked cannabis in treating symptoms of post-traumatic stress disorder (PTSD), something that has been anecdotally reported to be of benefit.[7] Certainly, the constituent compounds of cannabis, such as cannabidiol (CBD) have been shown to dampen cue-elicited fear responses in mice, and tetrahydrocannabinol (THC) with CBD can block reconsolidation of fear memory and facilitate fear extinction learning.

Using a double-blind cross-over design, they tested three cannabis concentrations: 'high THC' (12% THC, <0.05% CBD); 'high CBD' (11% CBD, 0.05% THC); 'THC + CBD' (7.9% THC, 8.1% CBD); and smoked placebo (<0.03% THC and <0.01% CBD). Eighty US military veterans with PTSD were randomised to receive 3 weeks of active treatment or placebo. As well as allowing further within- and between-participant comparisons in safety and efficacy, this cross-over design also permitted testing of participants' preferences for different concentrations. Cannabis smoking was supervised on the first 2 days in each stage, and thereafter they were provided with enough for 1.8g/day, having committed to abstain from any other cannabis. All treatment groups showed significant improvements in PTSD symptom severity, but none of the active interventions outperformed placebo. This first randomised controlled trial of smoked cannabis for PTSD chimes with the microdosing work: people do improve, but it appears to be underpinned by a placebo effect. It is interesting that 60% of the placebo group and 100% in the high THC and THC + CBD groups accurately guessed their assignment: one might ask how effective masking can be with smoked cannabis, but an equally intriguing question is why those guessing they were on placebo also showed gains. Of course, bigger and better science is needed on these topics, but the hand of caution grips our shoulders a little tighter.

Finally, as well as everyone's number one source for cat videos, Twitter is great for academic life, right? (Though the first piece this month on *JAMA* cautions of its dangers). From networking with colleagues, through to catching up on conferences and events, to hearing about the latest research – Twitter has it all. The Kaleidoscope team has noticed a shift: when we started the column in 2014 most of the papers we identified were through automatic emailed table of contents ('e-TOCs') from journals or manually scrolling through the biggest and best journals for you (we live to serve); more recently, a considerable number each month come from being highlighted by others on social media. All of this taps into rich contemporary debates about public engagement and dissemination of science, and at the *BJPsych*, like other journals, we have wondered how we measure 'impact factor' in a world where altmetrics (social media shares) are now put alongside number of citations. Luc et al report on the Thoracic Surgery Social Media Network (TSSMN) collaborative of leading cardiothoracic journals (see just how widely we research for you?) that prospectively randomised 112 representative articles to be tweeted by TSSMN or a control (non-tweeted) group.[8] In the intervention group four articles were tweeted about per day, at various times, over a 2-week period. At the 1-year follow-up, tweeted articles had greater altmetric scores – which is perhaps unsurprising – but crucially, these papers were also significantly more likely to be cited in the scientific literature. One may have any number of nuanced opinions on social media, but they are here to stay, and they have multiple roles in science, including informing the public and other scientists. Two themes emerge from this, first, altmetrics may not replace the traditional impact factor and citations, but it will serve to augment them; and social media, as with any tool, can be used for great benefit to increase public understanding of science, as well as harm through misrepresenting or presenting false data. Awareness and education seem key. All of which feels like an appropriate moment to hat tip and say thanks to Dianndra Roberts, who leads the great twitter output for the *BJPsych* (and who reins in the occasional rogue postings of Tracy).

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