Medical Student Award

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"I was physically alive, but spiritually broken" wrote Dr Yumiko Kadota earlier this year, hospitalised for exhaustion after working 24 consecutive days with over 180 continuous hours on call. "I give up. I am done. I surrender. I am handing back my dream of becoming a surgeon."[1]

Dr Kadota's story traces the destruction of a dedicated, passionate doctor, and would be tragic even if it were an exception. But it is not. In 2018, a mental health survey found that the rates of very high psychological distress among young doctors was 5.9%, almost 12 times higher than that among other professionals of the same age. Nearly 30% of young doctors reported suicidal ideation in the past year.[2] Between 2001 and 2012, 369 doctors took their own lives.[3] It is a damning indictment that Dr Kadota can be considered lucky having lost *only* her career, her passion and her "spark for life".[1]

The first step towards changing this sad reality is to understand its causes. The crisis of mental health among junior doctors may be due in part to the unavoidable fact that a career in medicine selects for people predisposed to poor mental health. Perfectionism is a desirable trait for the detailed, high-stakes work of a doctor, but is closely related to maladaptive tendencies of neuroticism, self-criticism and anxiety. Indeed, in a study of psychological distress among Dutch anaesthetists it was found that personality traits, particularly neuroticism, were the most significant predictor of burnout.[4] Similarly, the rigors of medical education require motivation and dedication, which have clear advantages however may leave doctors prone to over-commitment at work and a single-minded focus that neglects social and personal interests.

While this phenomenon certainly plays some role, a narrow focus on the individual neglects the contribution of broader, systemic failures. The 2018 Hospital Health Check Survey provides

a clear picture of just this. Across all New South Wales hospitals, 42% of doctors-in-training reported experiencing bullying, discrimination or harassment by another staff member. Of these experiences, 77% went unreported, most commonly due to a fear of negative consequences, and of the reported experiences 60% were dealt with “poorly” or “very poorly”. 56% of doctors-in-training felt that their workload was “somewhat too heavy” or “far too heavy", and when asked how much of their unrostered overtime they claimed payment for over 63% responded “none” or “less than half”. Common reasons for not claiming overtime included the cultural expectations of the workplace and a fear that doing so would reflect negatively on their perceived competence or negatively impact future job prospects. In 65% of cases, the respondent reported concerns about making clinical errors due to fatigue caused by excessive work hours.[5]

The healthcare system is failing junior doctors, and although this failure is not unique to surgery it is perhaps more pronounced in a culture that has historically centred on “stoicism”, “dispassion and emotional detachment”.[6] For example, surgeons are more likely than doctors of any other speciality to report the belief that doctors should be able to avoid depression or anxiety disorders, and that doctors with depression or anxiety should change to a non-clinical career.[2] This stigmatisation is particularly problematic given the environment of “pervasive” and “endemic” discrimination, bullying and harassment revealed in an expert advisory group (EAG) report commissioned by the RACS in 2015.[7] For many surgeons, the workplace culture simultaneously causes psychological distress *and* stigmatises its existence, creating a clearly viscous cycle.

The burden of this culture falls disproportionately on junior doctors, who exist at the bottom of the strict medical hierarchy and suffer an asymmetric power dynamic. Numerous studies describe this pattern, with humiliation and belittlement perpetrated largely by senior doctors towards their junior subordinates.[8] Female doctors similarly suffer disproportionately, and are the predominant victims of sexualised bullying and sex-based discrimination. This fact both contributes to and is exacerbated by the under-representation of females in surgery and in senior leadership positions; in 2017 females accounted for just 12% of active surgeons in Australia despite accounting for over 50% of medical school graduates.[9] The barriers to greater female representation are complex, but notably include cultural perceptions of feminine and

masculine specialties and conflict between family planning and the lengthy, demanding and inflexible pathway of surgical training.

Surgery is also notorious for long work hours and gruelling on-call schedules, and in the 2016 AMA Safe Hours audit had more respondents at high risk of fatigue than any other speciality.[10] Patterns of long hours, irregular shifts and limited breaks are well-established risk factors for burnout.[11-13] For example, in one survey of medical residents the prevalence of burnout was 31% higher among those working >80 hours per week, compared with those working <80 hours.[14] Burnout has in turn been associated with a wide range of mental and physical health issues including depression, substance abuse, insomnia, hypercholesterolaemia, diabetes mellitus, cardiovascular disease and many others.[15,16]

As well as limiting the wellbeing of junior doctors, unforgiving work patterns and the associated fatigue may impair clinical performance. The impact of fatigue and sleep deprivation on various cognitive and psychomotor tasks is well-established.[17,18] Among the more dramatic examples is a 1997 study that found psychomotor task performance after 24 hours of sleep deprivation to be equivalent to performance when intoxicated with a blood alcohol level of 0.10.[19] While intoxication at this level renders a person legally unfit to drive, let alone perform surgery, it is not uncommon for the shifts of doctors to approach and even exceed 24 hours. It is unsurprising, then, that nearly half of doctors report making clinical errors they attribute to fatigue.[20] In the high-stakes field of surgery, such mistakes are all the more significant.

A notable example of the potentially catastrophic effects of fatigue is found in the case of 18-year-old Libby Zion, who in 1984 was admitted to New York Hospital with severe otitis media. She was reviewed by a junior resident who noted her increasing agitation. He prescribed pethidine, an opioid that, in interaction with the monoamine oxidase inhibitor Libby took for depression, resulted in serotonin toxicity. Libby became increasingly confused, hyperthermic and unstable, and died in the early hours of the morning. When he treated Libby the resident had been working for 18 hours, and in the subsequent inquests fatigue was identified as a major contributing factor. The State of New York responded by enacting the “Libby Zion law”,

under which the working hours of junior doctors are restricted to approximately 80 hours per week.[21]

However, despite this evidence there are strong arguments against the limitation of working hours for junior surgeons. Importantly, large systematic reviews have failed to find an association between fatigue and surgical performance across a variety of domains, including surgical outcomes, academic performance and skills performance.[22] Rather, it is often postulated that shorter shifts result only in decreased continuity of care and are in fact detrimental to patient outcomes. Each handover, for example, is a source of potential error and miscommunication. In addition, experience is an essential component of surgical education and shorter working hours inevitably result in reduced clinical exposure. Data collected following the implementation of the European Working Time Directive (EWTD), which limited junior doctors to a working week of 58 hours, demonstrates a reduction in the caseload of surgical trainees by as much as 20%.[23] After all, the term 'residency' historically referred to a period of intense training during which doctors literally resided at the hospital. From an educational perspective, at least, there is truth to the adage that "the only bad thing about being on call every second night is that you miss half the cases".

The rostering of doctors is further complicated by administrative and financial realities. With limited staff, and finite funding for new staff, a reduction in work hours may simply give junior doctors a shorter period of time to complete the same workload. True compliance with restrictions is likely over-reported in the literature – following the EWTD restrictions in Europe over 55% of doctors reported feeling pressure to falsely declare their working hours. Just 25% felt that their contracts accurately reflected their actual schedule.[23] In addition, the shift-work rostering that is typically required to accommodate work hour restrictions is thought to both disrupt continuity of patient care and compromise educational opportunities. For example, mandatory days off each week may result in missed teaching opportunities such as grand rounds, lectures, tutorials and team meetings.

The systemic issues underlying the crisis of mental health among junior doctors are complex and multifaceted, and may require innovative and similarly nuanced solutions. It is important to acknowledge that progress has been made; the RACS Action Plan on Discrimination, Bullying and Sexual Harassment in the Practice of Surgery, for example, sets out a pathway for achieving cultural change and addressing many of the issues raised in the 2015 EAG report. This will be a long-term process, however early indicators have been largely positive. For example, the completion rate of the Operating With Respect eModules was 84% in 2017, up from 34% just one year prior.[24] Similarly, the RACS advocates for a 65 hour working week that balances the educational needs of trainees with the risks of fatigue, and supports policies to reduce the effects of fatigue.[25] However, encouraging cultural and systemic change is an inherently slow and challenging process. As Dr Kadota can attest to, many of the problems facing aspiring surgeons are far from solved.

Firstly, given the complexity and controversy of issues such as work hour optimisation, more must be done to understand the nature of the problems. The aviation industry, in which pilots undertake hazardous and high-stakes work often compared to surgery, provides a useful model for this process. The working guidelines for pilots reflect a robust body of evidence, including data on simulated flight crew performance tests that compare progressive levels of sleep deprivation to control groups.[26] Although the specific work hour restrictions for pilots (55 hours per week in the UK and 30 hours per week in the US) do not translate directly to surgery, the evidence-based approach certainly does. Rigorous research into surgical performance is increasingly feasible with recent developments in assessment tools, including global rating scales for technical skill[27], motion tracking analysis[28] and virtual reality programs[29]. Novel technology such as virtual operating rooms may be particularly useful in assessing a broad range of non-technical skills including teamwork, communication and decision-making in a safe environment. Technology may be similarly useful in minimising the disadvantages of altered work patterns. For example, structured electronic handover systems may reduce errors associated with increased transfers of care.[30] Tools such as these may provide a deeper understanding of surgical performance, ultimately allowing informed and successful solutions to the dilemma of fatigue in medicine.

Secondly, new approaches to medical education may help engage and motivate junior doctors in the field of surgery, while simultaneously facilitating a shift away from the culture of bullying. Currently, for example, a common approach to ward-based teaching involves a senior doctor posing a series of difficult questions to a junior doctor, often resulting in public humiliation (whether intended or otherwise). This practice, known in the educational literature as "pimping", may be a benign and useful motivator in certain circumstances. However, it is more often counterproductive, serving to reinforce a strict dominance hierarchy, to establish an atmosphere of hostility and to suppress creativity and intellectual curiosity.[31] A more truly Socratic approach to questioning involves collaborative discussion that employs critical thinking skills and uses purposeful questions to draw the learner to the appropriate conclusion. Similarly, modern educational theory such as the 'situated cognition' thesis emphasise the importance of the learning environment.[32] In this way, medical questioning framed in a constructive and supportive context is likely to facilitate deeper understanding. It is true that intellectual confrontation can be useful, and that the ability to think quickly and under pressure is valuable in surgery, however it is possible to achieve these aims without humiliation and intimidation. Like any cultural shift, a new paradigm of medical teaching may be difficult to enact. However, with unique access to senior surgeons, many of whom act as informal teachers for the junior doctors in their departments, the RACS is well positioned to promote change.

Lastly, junior doctors must be protected. Although prevocational trainees do not formally fall under the jurisdiction of specialist colleges, it is both the moral obligation of the colleges and in their best interests to advocate for their future members. Junior doctors will soon be colleagues of current surgeons, and will eventually define the next generation of surgical culture. When a doctor's physical and mental wellbeing suffers, so too does the quality of their work. By ensuring a safe and equitable working environment, the specialist colleges can maximise the potential of their future candidates. While many aspects of a junior doctor's employment are beyond the direct control of colleges such as the RACS, the power of advocacy and cultural change should not be underestimated.

For example, any serious effort to address the epidemic of bullying and discrimination must include support for the victims, many of whom are junior doctors. Common barriers that

prevent incident reporting, and thereby perpetuate the culture of bullying and harassment, include a lack of confidence in the mechanisms of resolution and a lack of awareness as to what constitutes inappropriate behaviour and how it should be reported.[33] Assuming the mechanisms of incident reporting and conflict resolution are confidential, appropriate and effective, these barriers can be addressed largely through education. The Operating With Respect eModules progam aims to do just this, however must be expanded to better include junior doctors. Currently, the modules are available to junior doctors only through an expensive annual subscription to the JDocs platform, and are not compulsory or widely advertised. Education is essential in empowering junior doctors to identify, report and resolve unacceptable conduct in surgery, and must be free and easily accessible for the victims.

However perhaps the most common reason cited by junior doctors who fail to report inappropriate workplace behaviour, or fail to claim hard-earned overtime pay, is a fear of adverse impacts on career progression. For aspiring surgeons, at least, this barrier is entirely the responsibility of the RACS and its members. If these fears are warranted, then the RACS must modify their selection process to ensure that candidates are never penalised for exercising their workplace rights. If the fears are unwarranted, then the RACS must make this fact truly unambiguous. Such changes may be easier in theory than in practice, but they are vitally important and can be achieved only with a fundamental cultural shift.

Although the cultural and structural problems facing junior doctors in Australia are nuanced, the existence of these problems and the need for solutions is unequivocal. Dr Kadota is a human being, with a right to feel safe and respected at work, a right to perform her job uncrippled by fatigue, and a right to a personal life beyond the hospital. In forcing her from the career she loved, the medical system failed not just Dr Kadota, but also her profession and her patients. Dr Kadota is exactly what a surgeon should be; she is passionate, dedicated and, as even her supervisor admitted when she announced her resignation, she was good at what she did. The RACS can and must do better for future surgeons, and in doing so will be doing better for surgery as a profession and for the patients they ultimately serve.

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