Mind over matter - insights from elite athletes overcoming adversity to achieving gold for improving junior hospital doctor training

The recent 2022 Commonwealth Games offer a timely reminder about the important relationship between failure and success, outcomes that have important significance in medicine and medical education. The stories of cyclist Laura Kenny, swimmer Adam Peaty and gymnast Jake Jarman describe challenges with mental health, physical injury and personal tragedy, however all achieved at least one gold medal at the championships. Kenny described struggling with motivation, disclosing that a crisis of confidence after a difficult year led to thoughts of her quitting prior to her triumphant performance. Peaty reported losing his spark, and faced backlash from heat of the moment comments following his 100m defeat. However, he was able to learn from his losses, and go on to win gold in the 50m breaststroke. Jarman revealed how after sustaining a serious fall, he had to contend with fear-driven intrusive memories during practise. Despite this he went on to secure not one but four gold medals. In sport, failure and success are often seen as 'two faces of the same coin', but in medicine and medical education, failure can lead to shame and shying away from trying again. Whilst there are similarities between junior hospital doctors (JHDs) and elite athletes, there are important differences in the way they train and practise, which offer novel insights on how medical training could be reformed and potentially improved for the better.

Both JHDs and elite athletes undergo years of often gruelling training to become highly skilled in their respective fields. This process inevitably involves individuals making significant sacrifices and maintaining dedication towards end goals, be it a gold medal or a certificate in completion of training. Both have to perform well under high pressure, with little or no margin for error[1]. Athletes have to cope with various different stressors during competition[1], which may be intrinsic to the individual such as negative beliefs and impact on self-confidence. They also have to contend with extrinsic challenges such as distractions imposed by observing spectators during performance[1]. Similarly, there are parallels again with medicine where JHDs have to undertake complex tasks in front of patients, senior doctors or the multi-professional team, whilst also having to manage internal cognitive stressors often amid highly challenging circumstances and external system pressures.

Under these conditions individuals in both contexts are at risk of succumbing to these threats, whilst somehow having to find a way to persevere and demonstrate resolve if they are to achieve their desired outcomes. These factors may also be compounded by mental health issues, diminished resilience and burnout. However, a crucial difference is that elite athletes often have access to qualified coaches and structured physical and psychological coaching programmes, whereas the model of training for JHDs is predominantly one of overseeing tasks that require completing and supervision of learning. The use of coaching, well-described across multiple sectors and sport in particular, leads to the development of 'grit', a key ingredient in the successes of Kenny, Peaty and Jarman. 'Grit' explains how certain individuals are able to remain tenacious and maintain effort to motivate themselves despite experiencing challenges, adversity and setbacks[2,3]. 'Grit' is also a protective resilience factor against individuals surrendering aspirations, and for those at the top of their game, the way in which they demonstrate the mental fortitude that provides the 'winning edge'[4]. Grit is not something that just develops through natural intention

or from simply being around high performers, rather it is something that is built up over time through coaching, and particularly mental skills training.

The use of self-talk, mental imagery and relaxation techniques are examples of mental skills used by competitive athletes to reduce performance anxiety[5]. Furthermore, the use of these cognitive interventions alongside either coaching or mentoring has been shown to enhance sport performance[6]. In the aftermath of winning gold, Kenny described using positive motivational self-talk to 'psych [herself] up' before competing, in order to propel herself forward in the face of self-doubt[1]. Self-talk in the way of instructional statements or cues is known to help individuals focus their attention on the technical aspects of a task[1]. Similarly, mental imagery or visualisation techniques which consist of 'intentionally bringing images to mind' can also be used for similar purposes[1(p.121)]. Peaty with his sleeves of lion tattoos across both arms, has made reference to these powerful animals in harnessing motivational energy during competition, and imagery is known to enhance skill acquisition and optimise performance[1,5,6]. Mental blueprints of skills can also be created in training without skills actually being physically enacted[1]. These internal representations can then be reactivated, rehearsed and manipulated in both future training and competition settings to help individuals perform better in the future. Finally, mindfulness based interventions have acquired significant interest over the past few years and Jarman described the importance of directing his attension to focusing on enjoying the process of competition rather than the outcome of it as a way to reduce pressure on himself. Although similar themes have started to emerge in certain clinical disciplines, for example in the use of mindfulness in the operating room[7], it appears that JHD training at present focuses on the acquisition of clinical and technical skills with less emphasis being given to mental skills training.

Perhaps most critically, the difference in relationship between athletes and their coach, and JHDs and their supervisors speaks to another fundamental difference currently between sport and medicine. Kenny referenced pleading with her coach for help the night before she won gold, citing that she still had 'one more roll of the dice', and in sport, mentoring is also an integral part of the coaching relationship[8]. Likewise, Peaty symbolically placed his gold medal straight around his coach's neck immediately after the medal ceremony, demonstrating his significant personal affection for his coach. Jarman has credited that a chance encounter with a sports coach who recognised his gymnastic potential as a young child in the playground, was pivotal in him pursing gymnastics. By comparison, JHDs often describe difficult, absent or strained relationships with their supervisors[9] and supervision is often delivered in the context of assessing competency, with emphasis tending to be on professional rather than personal development. There are conflicts around whether supervisors with responsibility for making competency based decisions affecting progression of training can truly act as a coach to trainees, where an inherent power imbalance may be a barrier to fostering authentic mentor-mentee interactions[9]. However, in sport by comparison those evaluating performance as either the judge or referee are clearly distinct from those providing coaching and support from the side-lines. This perhaps crystalises another of the challenges faced within current JHD training where the conflicts between supervision and coaching or mentoring can lead to dysfunctional working relationships.

There are important differences between the elite athletes and JHD which make comparisons difficult as well. Competition is inherent within sport and individuals often compete with each other, or alongside each other with other teams. In medicine, the need for team-working and collaboration is critical, and competition between teams can lead to harm for patients. That said, fragmentation of ward teams over the past few decades has impacted on JHD morale as well as well-being, so there are opportunities for learning from sport around how camaraderie and team spirit can be nurtured among individuals working across different rotas or ward areas.

Another difference between elite athletes and JHD is around the career trajectory since among the former, careers are short whereas among the latter, careers are long. Likewise, coaching is often targeted on optimising physical performance first and foremost, with focus cognitive ability coming after physical skills are secured. Among JHD supervision is targeted on developing expert knowledge and skills, however knowledge generally remains the priority between the two across many postgraduate training programmes. This difference matters because physical prowess generally peaks in the second and third decades whereas cognitive ability within a medical context, increases decade after decade, until such time as impairment results from natural age-related decline. For all JHDs the challenge is to acquire experience and expertise to deal with complexity and uncertainty, whereas the challenge for elite athletes is to master tactics and strategy in order to minimise unpredictability and volatility across a given set of situations.

The legacy of the Games will be significant within sport and outside it, and within medicine, there should be a critical reflection around radically reforming the way in which we approach training for our junior workforce. Firstly, there is an opportunity to evolve medical educators into coaches, developing their coaching and mentoring skills, as well as designing time for both into training programmes in tandem with supervision. Secondly, there could be greater use of evidence-based mental skill techniques during supervision encounters such as imagery, self-talk and mindfulness to optimise performance on complex tasks and resilience in uncertain environments. And finally, there should be an explicit acknowledgement that akin to elite athletes, junior doctors are amongst the most talented individuals of their generation, who enter medicine full of aspiration which sadly often fades in the face of challenges and adversity. They are well deserving of efforts to be made to better support their development leads. Innovation must always be balanced with risk and feasibility. Consideration will need to be given on how a coaching model and use of mental skill techniques could be embedded within existing training programmes and balanced with competing priorities for overstretched NHS resources, funding and service provision. The role of post-graduate training coaches will need to be defined and developed in collaboration with psychologists to better understand how coaching models and the use of mental skill techniques could be adapted to a medical context to enhance resilience and optimise performance. Whilst the insights shared here are by no means a ‘magic bullet’, aggregating marginal gains[10] across better nurturing junior doctor grit, with continuing to champion for better working conditions and challenging system pressures, may help safeguard our junior workforce and ultimately enhance future patient care.

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