Towards an understanding of resilience and its relevance to medical training

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OBJECTIVES This article explores the concept of resilience and its potential relevance to medicine. It also looks at the dimensions of resilience and its ethical importance for effective professional practice, and considers whether a focus on resilience might be useful in medical training.

METHODS An applied literature search was conducted across the domains of education, ethics, psychology and sociology to answer the research question: 'What is resilience and what might it mean for professional development in medical education?' This article predominantly considers the findings in relation to training in undergraduate and postgraduate settings, although the literature is wide-ranging and findings may be applicable elsewhere.

RESULTS Resilience is a dynamic capability which can allow people to thrive on challenges given appropriate social and personal contexts. The dimensions of resilience (which include self-efficacy, self-control, ability to engage support and help, learning from difficulties, and persistence despite blocks to progress) are all recognised as qualities that are important in clinical leaders. Much of what is deemed good practice in modern pedagogical approaches to medical training may support the development of resilience in adulthood, but this concept has rarely been used as a goal of professional development. More research is needed on the ways in which resilience can be recognised, developed and supported during and after clinical training.

CONCLUSIONS Resilience is a useful and interesting construct which should be further explored in medical education practice and research.

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INTRODUCTION

Developing professionalism is a core expectation of modern health professional education. In medicine, this requires defining, learning and assessing 'a set of values, behaviours and relationships that underpins the trust the public has in doctors',[1] which then need to be maintained and further developed throughout a clinician's working life. Doctors must sustain hard work and manage high levels of demand and responsibility, ever-changing circumstances (in terms of patients, staff and organisational requirements) and increasing public expectations for care, while living up to the standards required of all doctors by their regulators (the General Medical Council in the UK[2]). Best organisational practice can act protectively by encouraging safe practice cultures and mutual supervision and support, but health professionals are always at risk of periods in which workload, adverse events, emotional demands and the lack of supportive relationships (to name but a few factors) may act as stressors that can undermine professional practice. Coping with these demands requires stamina, good health, appropriate knowledge and skills, and the ability to respond positively to challenging experiences. Doctors need to be able to care for themselves in order to offer the best care to their patients; however, longitudinal research has shown that those who do burn out are likely to have been functioning suboptimally for some time before they finally leave the health service.[3] In addition, doctors represent huge investment in terms of time and resources, both on their own part and on the part of the economy that supports them. The present authors noted that the concept of resilience, which appears to relate to the long-term ability of individuals to survive in and thrive on adversity, has relatively little representation in the medical education literature and agreed to examine the literature in more detail to explore its potential value in clinical education.

The objectives of this article are therefore to explore the concept of resilience, summarise key findings from the non-medical literature, and reflect on any apparent relevance to medical training.

WHAT IS RESILIENCE?

'Resilience' has been referenced across the literature in many different ways; one literature review notes that it can be construed as 'a trajectory, a continuum, a system, a trait, a process, a cycle, and a qualitative category' and that it has been applied in both physiological and psychological terms.[4] Many articles emphasise resilience as flexible adaptability in the face of challenge, which can be recognised in both individuals and social groups. One study has defined resilience as a set of attributes demonstrated by an individual over a period of time as: 'the ability to succeed, to live, and to develop in a positive way ... despite the stress or adversity that would normally involve the real possibility of a negative outcome.'[5] It is the dynamic nature of this definition which sets this quality apart from related psychological traits such as 'hardiness'[6] or 'mental toughness'.[7] Cyrulnik, a neuropsychiatrist, himself an orphan of the Holocaust, has made it his life's work to study child survivors of conflicts and parental loss, and emphasises that resilience can be nurtured and can alter the outcomes of trauma.[5] This contrasts with concepts that address 'deficits'[8] (what an individual lacks, what makes a person vulnerable), and puts a positive emphasis on recognising and supporting the coping mechanisms and strengths of individuals.

Resilience: a psychological perspective

The bulk of the literature on how people become resilient comes from child psychology, and stems from the evidence, striking to many in the health care professions, that some children, families and adults emerge much less damaged by significant historical adversity than others. Observational studies in groups as diverse as genocide survivors, socio-economically disadvantaged immigrant communities and teenage single parents, have utilised the concept of resilience to define its parameters, and to develop interventions that improve both individual and family unit resilience. Martin and Marsh have conducted a number of studies in school settings linking academic progress with student self-perceptions and behaviours, and have usefully summarised the dimensions of individual resilience as 'confidence (self-efficacy), coordination (planning), control, composure (low anxiety), and commitment (persistence)'.[9] In practice, this means that resilient students believe that what they do can have a positive impact on a situation, that some components of the 'system' can be controlled or influenced by one's own actions, that persistent effort is worthwhile, and that setbacks or potentially threatening events are inevitable and surmountable, but do not need to cause excessive anxiety or withdrawal.

The concept of resilience is widely used in bodies of work on positive psychology and 'salutogenesis' (health-seeking behaviour), which also form some of the basis of modern coaching approaches (e.g. the

resources on resilience at the Centre for Confidence and Well-Being[10]). The work of Antonovsky, a medical sociologist, recognises resilient individuals as those who 'manage stress and stay well' and who learn from and find meaning in what might otherwise be significant or overwhelming psychological threats.[11] Positive coping mechanisms such as the seeking of social support in an effective way, humour, management of negative emotions, reflection for learning, and the use of moral beliefs to motivate oneself all characterise resilient individuals and units. Outcomes of randomised controlled trials of preschool education programmes designed to strengthen the education-related and relationship skills of children from deprived backgrounds show better outcomes in terms of psychological well-being and cognitive adaptability.[12] Interventions such as Sure Start[13] have utilised related work on intensive parenting support[14] to improve early social confidence and emotional stability. These initiatives, however, are not about being overprotective or avoiding risk. Rutter points out that there is evidence that challenging experiences assist the development of resilience, and that people need to have some exposure to risk to allow their coping mechanisms to mature.[15] Rutter's conclusions from multiple empirical studies show complex findings: ultimately, extremely adverse conditions can cause damage to neural programming, but the author concludes that individual 'resistance may derive from physiological or psychological coping processes rather than external … protective factors'.[15] His view is that interventions to develop resistance to stressors are best delivered as a managed process, whereby exposure to challenging situations can be (to some extent) planned and supervised.

Resilience: a sociological perspective

Sociological research on how social environments develop resilience and resilient human beings is rather scarce and undertheorised,[16] but it seems clear from work we identified that resilience can be developed and determined by factors that act at the social as well as the individual level, and that the environment in which an individual must survive may support or undermine his or her personal resilience. Professionals know that units can become vulnerable because of 'the exposure of groups of people or individuals to stress as a result of … disruption to groups' or individuals' livelihoods and forced adaptation to the changing … environment'.[17] Social resilience, which appears to depend on the group's mutual trust and bonds, denotes the ability to absorb such disturbances and rapidly stabilise the unit. This concept can apply at an organisational level, or in the micro-unit of a team or a family. For instance, Grant *et al.*[18] used observational approaches to look at how families cope with the birth of a child with intellectual disabilities. They concluded that some families become resilient through finding positive meaning in the event, gaining a sense of control and continuity, and maintaining valued identities across the family network.[18] Material, social, cultural and political aspects all seem to influence the outcomes.

There is a growing field of research into resilience in communities: factors such as neighbourhood stress, deprivation and inequality have all been found to reduce social coherence and resilience.[19] Public health experts assert that the essential ingredients to ameliorate such stress and vulnerability are social support and personal control,[20] and that modification of the social environment is also potentially important to the development of resilience. The work of Alex Zautra *et al.* links observations of how people cope with chronic pain with how communities assist with resilience.[21] They describe how on an individual level, '…denial can turn ordinary experiences into nightmares, a dynamic that influences our emotional lives in unpredictable ways, sometimes leaving us more troubles than … the original experience', but that society can help to foster adult resilience to chronic disability by the development of social trust, reciprocity, neighbourhood efficacy and civic engagement.[21] This highlights the potential for communities to respond to diverse situations and help to return a sense of meaning to patients' lives. In other words, although individual resilience can be undermined by excessive challenge, others can assist in making the challenge manageable.

Resilience: an ethical and moral perspective

Doctors share with military personnel a risk for suffering what is termed 'moral injury',[22,23] which refers to the emotional or psychological damage suffered by people who repeatedly witness, or participate in, acts that contravene ordinary moral expectations. Proximity with death, and witnessing or causing trauma, are part of both the medical and the military worlds, as is the need to function within highly complex and unpredictable situations. These impose their own moral demands and codes, which often run counter to the norms and expectations of society; examples of such situations include the causing of pain to a child or the undertaking of mutilating surgery in order to cure a serious condition. When assisting patients, doctors must to some extent contain their 'normal' feelings and refrain from making 'normal' moral and social judgements.[24]

Shifting between different moral contexts can itself represent a risk for moral injury:[20] the switch from war to civilian life is well recognised as a source of stress, and this shift is one that doctors undergo on a lesser scale every day. A number of US military training programmes have adopted strategies designed to help recruits develop the resilience to deal with these transitions. Challenging scenarios are used to help personnel recognise and acknowledge the likelihood of encountering potentially damaging situations, and to encourage them to develop coping strategies in advance. These strategies[25–27] have shown some impact on mitigating the effects of moral injury, thus reducing the risk for attrition, as well as protecting against long-term psychological damage.[28] However, the types of intervention described in this literature do not yet seem to have been applied to medical personnel in civilian settings.

An individual does not need to be the perpetrator of an act in order to be morally injured by it. Passivity and disempowerment within the structures and systems of one's work can also be damaging: cohort studies in early-career lawyers suggested that emotional exhaustion and career dissatisfaction were associated with individuals feeling they had been obliged to accept organisational values that were in conflict with their own.[29] Similar findings in medical students show links between passive distress (caused by the inability to intervene in events that students find emotionally disturbing) and poor levels of resilience.[30] The extent to which pre-existing resilience in students minimises the trauma of such situations is unclear, but it is likely that a resilient student and a more vulnerable person will deal with this type of event in different ways: rather than becoming anxious or denying the issue, moral injury is avoided or minimised by resilient individuals, who 'employ transformational coping strategies of understanding and contextualising the circumstances of the situation, coupled with situation-focused problem solving, to reframe the event in terms of a challenge'.[18]

Doctors and other health professionals also face ethical challenges in their efforts to improve care and challenge deficiencies in health systems. They face many frustrations, including shortages of resources, excessive bureaucracy and organisational sloth, and may feel thwarted when they are unable, for example, to prescribe what they think will benefit patients because of others' decisions on funding. When decisions are constrained by factors outside the individual's control, and when all of the available options seem ethically unpalatable, moral injury and burnout may ensue.[31] Professionals need to be resilient (persistent, committed, adaptable) in order to keep improving systems and to ensure they can take a principled position when necessary. This underpins the importance of embedding core professional values during the training years so that doctors can find meanings and reference points during difficult experiences, and learn to confront and redress poor practice.[32]

RECOGNISING AND DEVELOPING RESILIENCE: LINKS WITH EDUCATIONAL APPROACHES

On the basis that the quality of resilience is useful to professionals, we sought to establish what is already known about how educational approaches might effectively develop it. The possibility that resilience can be strengthened by interventions after the early years of life is an attractive concept for health professional training, and has been particularly explored in the nursing literature.[33] The development of resilience has been discussed as a mechanism through which 'the current trend of … leaving the health care system due to issues associated with workplace adversity' might be reversed, and 'lower … vulnerability to adversity', improved well-being and better care outcomes achieved.[4] Rates of student dropout caused by health problems and difficulties in meeting academic and financial demands raise concern about whether the right people are selected into training and whether there are any robust predictors of students' future ability to cope in adverse circumstances.[34] Research into admissions procedures has increasingly advocated for selection on cognitive (academic achievements such as grade point average or entrance tests) and non-cognitive (attitudinal and motivational) capabilities and promoted a combination of written and interview screening to include scenario assessment.[35] Whether using some of the psychological tools which test for trait resilience would be a useful part of admissions screening and would predict positive outcomes is a subject for future research.

A systematic application of the concept of resilience to professional training is not yet common, but Marsh and Martin[9] summarise useful implications for education methods. They operationalise each of the domains underpinning the theoretical construct of resilience into specific educational approaches thus: the development of self-efficacy requires less didactic and more self-directed learning; students need to set realistic goals and learn to use feedback to build confidence and strengthen their own performance; persistence and commitment can be enhanced by

setting and working towards longer-term goals, and so on.[9] Giving students some choice and control over aspects of their learning mirrors mechanisms that engender belief in one's ability to influence the 'system'; examples include allowing students to choose the content of their reflections on practice, or the timing and focus of supervision sessions and mentoring relationships,[36] and using student representation to create course changes. Graded exposure to uncertainty and difficulty through well-structured approaches to clinical learning,[37] with recurrent experience of overcoming difficulties and achieving goals, gradually leads to internalised confidence and belief in one's own abilities. Coaching, 'stretch assignments' and feedback all assume that improvement is possible and demonstrate that successful progression is based on persistence and commitment as much as on innate ability and competitiveness. A synthesis of the nursing education literature on resilience summarises the ideal education environment for developing professional resilience as one that establishes effective 'social connection with peers and other adults, positive role-modelling by winners or achievers, unobtrusive monitoring of well-being, and coaching to help in goal setting and elevating expectations'.[38]

Another use of the concept of resilience links with the importance of developing coping mechanisms[39] and leadership abilities within clinical professional development. Interviews to identify the attributes of resilient professionals in the clinical context show that such individuals are recognised by their peers through their management and leadership styles, as well as by the ways they manage themselves and their professional demands.[40] Encouraging students to look for examples of resilience in others, and to critique how they recognise this quality in themselves and others, may therefore be a helpful learning tool. Measures of resilience are reported in the literature[41,42] and are said to be robust predictors of how good adults are at using positive emotions to prevent adverse impacts of stressful events and environments.[43] Using these measures for formative reflection and discussion may also be useful as a starting point from which students can begin to focus on their own coping abilities and resilience.

In medical education, the use of challenging scenarios has been an integral part of ethics teaching for some years.[44,45] This approach is of crucial significance, given its value not just as a means of developing ethical reasoning skills, but also as a way of developing resilience. Moral complexity emerges when events do not fit within learned 'rules'. In the medical context, learners need to become aware of the kinds of complexity that are associated with medical practice and to develop attributes that will help them to deal with such difficulties. They also need to be aware of the systems and hierarchies within which they work, and of how to participate in and engage with them. The robust use of simulations and real-life case studies in ethics training can assist in developing the thinking that allows learners to attain a sense of control, and to transform uncertainty from threat to challenge. To achieve this, case studies must be *genuinely* challenging, otherwise the necessary skills will not develop: if students are led to assume that there are straightforward answers, this will undermine the point of learning that complexity and moral challenge are inevitable aspects of their chosen profession.

Some caveats on applying the concept of resilience in medical education

The literature we have found is interesting and diverse, but most of it developed outwith clinical education settings. Studies of developing resilience in adults are relatively few, although the possible transferability of findings is interesting. Resilience is not an end in itself; developing other aspects of effective professionals also requires attention.[46,47] For educators and advisors, the well-being of students is an intrinsic concern: medical students need to be prepared for the challenges they face not just in practice, but during training itself.[48] Importantly, the literature on social cultures and how these can affect individual resilience should be considered; the hidden curriculum at medical school, and the attrition that occurs in professionalism and performance as a whole in the face of the demands of practice (as reflected in sickness in doctors, burnout and pathways to error) are relevant here, as the most resilient of individuals is likely to be subverted by a consistently adverse working environment. Research that focuses on the development and retention of professionalism may usefully draw on the concept of resilience and its relationship to performance, but other factors, such as level of education challenge and education climate, will also be relevant to long-term outcomes.

CONCLUSIONS

Resilience appears to be a useful concept to consider in our education practice, and its conscious exploration in professional development may add new dimensions to learning and reflective practice.

1. Select people who already show some interpersonal strengths that can be built on in training: autonomy, resilience, team orientation and self-questioning
2. Identify approaches for effectively graduating students with developed interprofessional capabilities
3. Explore approaches to embedding interprofessional practice as a core component of health professional practice standards
4. Review existing IPE programmes for what has been learned and for what can be adapted to existing and new IPE initiatives
5. Design and implement a nationally coordinated programme of research that is responsive to local conditions and requirements
6. Contribute to the development and implementation of a national IPE knowledge management strategy
7. 'Hold' them while giving them challenges. Make sure they are known as people,that they receive some tutor or mentor continuity over time, and that they are given feedback on how they perform as they develop
8. Make them reflect on themselves and on how they work in teams and with patients, and on what their strengths and weaknesses are
9. Make them think: about professional challenges, difficult relationships, where things go wrong, what they could do differently
10. Make them safe – as much as possible – so they can experiment with this before they are exposed to major challenges, and while experiencing these
11. Provide regular supervision on clinical cases in which they can discuss complex needs generated by doctor-patient relationships, transference and counter-transference, and the emotional burden of caring, because the professional sometimes needs to be 'held' in order to hold others
12. Encourage a virtue ethic: work with why and how they want to help, rather than when they think they should, and be open to exploring areas they dislike
13. Encourage boundaries and stress release, avoiding burnout and setting limits
14. Challenge defences and emotional resistance early on; these can only get worse

Figure 1 Education conditions that may develop professional resilience. (Based on Howe A, 'Family practice – meanings for modern times'[49]

We argue that it is of interest to the clinical education community because it may be derived from a set of attributes for which we can select, and which we can develop during formal training and professional practice (Fig. 1).[49] The conditions which sustain it are likely to be compatible with those of other good educational and organisational practices, but this area requires further testing and debate.

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