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Fostering resilience in junior doctors: learning from resilience traits and coping strategies of senior physicians

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INTRODUCTION

Burnout is highly prevalent amongst junior doctors in early training.(1,2) In Singapore, up to 80% of junior doctors reported feeling burnout.(3) Burnout can lead to increased medical errors(4) and mental health issues.(5) Hence, fostering resilience - as part of an individual learning process in physician training - is integral in preventing and managing burnout.(6)

Resilience is the process of adapting well in the face of adversity, a positive attribute honed over time that reflects the ability to succeed and develop positively despite adversity.(7) The ‘dynamic’ nature of this definition sets resilience apart from the similar but inborn psychological trait of ‘hardiness’ (a character trait and personal resource when faced with stressful events), and has the elements of commitment, control, and inner belief that change is a challenge and opportunity.(8,9) Resilience can be difficult to define in day to day practice, and less so in physicians.(10)

In our previous work, senior faculty were found to have reduced burnout and higher work satisfaction despite similar fatigue scores as post-graduate year 1 trainees,(11) consistent with earlier studies which reported that burnout is less prevalent amongst senior physicians compared to junior doctors.(12) We postulate that senior physicians are more resilient based on aforementioned definition, as resilience has been known to be inversely related to burnout.(13)

This study was thus conducted to identify specific traits and strategies of resilience within our senior physicians, that junior doctors can learn from. The secondary aims were to gather their views on teaching and fostering resilience amongst junior doctors.

METHODS

This study was conducted from 1st July 2018 to 31st December 2018. All senior physicians (those with postgraduate qualifications or specialist qualifications as paediatricians) from the

Department of Paediatrics, National University Hospital of Singapore were invited to participate via emails sent out by the department secretary.

The quantitative aspect included questions on demographics, and administration of validated rating scales - the Connor-Davidson Resilience Scale 25-item scale (CD-RISC-25)[14] and the Maslach Burnout Inventory[15,16] Human Service Survey (MBI) for Medical Personnel.

The CD-RISC 25-item scale measures resilience[14]- scores range from 0 to 100, with higher scores reflecting greater resilience. The MBI is a validated 22-item inventory which reports scores in 3 domains of burnout -emotional exhaustion (EE), depersonalisation (DP), and low personal accomplishment (PA).[15] Burnout is defined as fulfilled criteria in all 3 domains of the MBI (i.e. high EE ≧ 27, high DP ≧ 10, and low PA ≦ 33).

The main focus of this study was qualitative one-to-one interviews for consenting participants. Semi-structured interviews lasting between 45 to 60 minutes were conducted in English using an interview guide (Appendix) with planned probes which was developed after a literature search on resilience followed by discussion within the study team.

Interviews were conducted by 2 trained research assistants with qualifications in psychology, audiotaped and transcribed verbatim. Transcripts were analysed thematically by the first (TMY) and third author (TTYY). Reminder emails were sent out to encourage participation to gather sufficient data from interviews to achieve data saturation. Transcripts were reviewed line by line and coded such that each coding unit was a sentence. The coding process utilised a hybrid method of both deductive (themes determined a priori) and inductive (from ground up) methods. Inductive coding underwent an iterative process, looking at generating the unit of meanings, categorising the data and developing themes that represented aspects of the phenomenon. As our deductive coding involved using pre-existing codes as a guide and template for the clustering of information, a codebook was formed comprising all the codes and their definitions which were reviewed and analysed iteratively through multiple

discussions between the team members (TMY, LJM and TTYY). The inter-rater reliability was 0.81 (Kappa) for both inductive and deductive coding.

Bivariate comparisons were conducted using student t-tests for continuous scores, and chi-squared tests for categorical data (SPSS version 23). All interviews were analysed by thematic analysis using Nvivo 11. Institutional Review Board approval (Reference No 2018/00461) was obtained. The study was supported by an internal grant (Khoo Teck Puat-National University Children's Medical Institute (KTP-NUCMI) Seed Grant, dated 25th April 2018).

RESULTS

Thirty-one out of 101 senior paediatricians participated (response rate 30.6%), out of which 15 agreed for interviews.

The median age was 32 (range 27-69) years, and median years of working was 7 (range 4-42) years. Majority were females (77.4%). Almost all (96.8%) worked full time. Majority had a religion (77.4%), were married (71%) and 45% had children. Majority (71%) had support for their households e.g. having domestic helpers and/or parents helping with the household chores and taking care of their children.

The mean score on the CD-RISC-25 was 77 (range 62-95, SD 9.71). Only 6.5% (2/31) of the senior physicians in our department fulfilled the definition of burnout. In terms of the individual domains, 19.4% had high EE, 16.1% had high DP, and 19.4% had low PA. Registrars showed a tendency towards a higher rate of burnout in all 3 domains compared to consultants- this was only statistically significant for the subdomain of lower personal achievement (p=0.013) (Table I).

Resilience and burnout scores showed a significant inverse relationship in that better resilience was correlated with higher sense of personal achievement (r=0.512, p=0.003). There

was no relationship between resilience scores and age, gender, religion, marital status, number of children, years of practice/designation, or number of job scopes.

Resilience traits and strategies (Table II) were identified thematically. The trait of self-awareness was most frequently mentioned across 13 sources and was key in identifying resilience strategies to apply. Interviewees felt that perseverance helped to foster resilience soon after the individual had gone through a challenging experience. Lastly, optimism is about having a positive attitude which potentially could be cultivated.

Prioritisation was coded as the top resilience strategy. Interviewees felt that prioritisation was an important skill to acquire at work, and for self- care due to limits to one's time and resources. The strategy of framing one's perspective was helpful by allowing one to look at the bigger picture and thus create an expanded view of the circumstances in the narrative. Reflective practice was an intentional approach used by interviewees to enhance self-awareness, and to examine circumstances and consider potential solutions. Conversely, the absence of reflection could potentially hinder personal development. Seeking support from peers, mentors and family was also another major strategy. The support from colleagues offered a means of buffering against challenges at work and strengthened the resilience of the individual in the team.

Self-awareness as a trait has the most interactions with the common strategies identified. Having a high internal locus of control was associated with strategies such as self-reflection, self-discipline, and setting boundaries. Figure 1 shows interactions found between traits and strategies.

All agreed that resilience could be fostered and taught to varying degrees. Some felt that resilience could be fostered via day-to-day lived experience. Some interviewees also felt that mentoring relationships could be a catalyst in fostering resilience. A large proportion of

participants also expressed that an individual's lived experience and receptivity to learning, also played a crucial role in fostering resilience.

DISCUSSION

Senior physicians in our study had higher resilience (mean score 77) compared with physicians in the United Kingdom (mean score 65) and South Africa (mean 72.5) in earlier studies[17,18] and there was a relatively low rate of burnout amongst them. Using fulfilment of criteria for all 3 domains within the MBI as 'burnout',[19] only 6.5% of our senior physicians experienced burnout. This was lower than other studies of paediatricians in Switzerland (up to 33%),[20] and China (56.6%),[21] and in the lower limit of range of overall burnout rate amongst physicians (0-80.5%) reported in a recent systematic review.[19] Of note, we observed an inverse relationship between resilience and personal achievement aspect of burnout which is consistent with earlier studies.[13,22] This low burnout rate could be related to the traits and specific strategies adopted in meeting daily challenges at work or in life as observed within interviews.

Our findings are in line with the 'Broaden and Build' model of positive emotions and resilience which posits that over time, the broadening of thought-action repertoires that is enabled by positive emotions and traits (such as hope, contentment, love) builds up personal resources including physical, psychological and social resources.[23,24] In our study, the traits reported by our senior physicians such as self-awareness allow a better cognitive appreciation of one's limitations and strengths such that one can set boundaries for work commitments and continue to contribute productively at work. The trait of perseverance encourages the senior physician to persist in an endeavour even when the going is tough. With the benefit of past experiences, well-honed skill sets and within the limits of one's capability through self-awareness, these senior physicians can see a task to its completion. In addition, the trait of optimism broadens the time horizon and allows the senior physician to see the positive but

realistic side of each situation beyond the negative aspects of any outcome. In turn, these traits and positive emotions serve to build up an individual's resources within the intellectual (reflection), psychological (ability to problem solve by prioritisation, changing perspective) and social domains (seeking social support). Of note, the mobilisation of these personal resources can reinforce these positive traits just as much as how the presence of the positive traits can broaden and build up individual resources, a process termed as reciprocal causality.[(24)]

What are the practical applications of these findings which can help junior doctors in training?

Two broad areas can be considered. First, in terms of desirable traits observed within our senior physicians, one common point made by different interviewees, was that these personal traits, despite being inherent within an individual, can also be inculcated within learners over time. This is consistent with the previous literature which found that there are modifiable factors which can bolster resilience.[(10)] It was also mentioned by the interviewees that challenges experienced in the junior years of training helped foster resilience over time. This suggests that challenges experienced early in training should be seen as useful opportunities to cultivate resilience. Faculty could do so by emphasis on self-awareness, re-framing of issues, as well as by role modelling perseverance and optimism.

Second, whilst the inculcation of positive traits can broaden and build up personal resources, the equipping of specific skills can facilitate the development of traits as well by reciprocal causality.[(23)] It would be useful to invest time and efforts during curriculum or supervision to attend to areas such as time management, prioritisation of tasks amidst an overwhelming list of things to do, equipping of problem solving skills such as identifying a problem, making a list of possible solutions, enumerating pros and cons of each solution, and finally making a decision through reflection.[(25)] In addition, it is crucial to enlist help from

others, and this mobilisation of social resource can in turn reinforce positive traits including perseverance and optimism.[26]

We recognise our study limitations. The sample size is relatively small, and consisted of physicians who had voluntarily chosen to participate. They may be a self-selected, enthusiastic group who held certain traits and adopted strategies when they meet daily challenges, thus having less propensity for burnout. The small sample size which was predominantly female, might also explain why there was no relationship between resilience and gender in our study, although this has been shown in previous studies.[27] As we wanted to ensure anonymity, we did not collate reasons why some were not willing to participate in the study. While data saturation was achieved for qualitative results, we recognise that the response rate for interviews is even smaller and could be due to potential participants feeling uncomfortable for face to face interviews about their job and possible risk of confidentiality breach, or might not be able to commit to time for interviews We also recognise that the use of interviews could be subjected to recall bias and responses may be affected by their current situation at work or life events in their personal lives. Third, we did not acquire data on personality profile which would further shed light on the inter-relationships between personality, resilience, and burnout. While this study only included a group of senior paediatricians, we believe that our in-depth results in the interviews give strength to the association of such traits and strategies with better resilience and lower burnout and thus would be useful to junior doctors of different medical specialties.

In conclusion, there are specific traits and strategies related to resilience in our senior physicians which our junior doctors can learn to adopt. Greater involvement of senior physicians in mentoring and modelling resilience traits and strategies can potentially reduce burnout amongst our junior doctors.

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Table I: Burnout scores of the respondents (by domain)

MBI domain*	No. (%)		
	Registrar (n=17)	Associate Consultants and above (n=14)	Total (n=31)
High EE	4 (23.5)	2 (14.2)	6 (19.4)
High DP	4 (23.5)	1 (7.1)	5 (16.1)
Low PA ^	6 (35.3)	0 (0)	6 (19.4)

*High EE defined as ≧ 27, High DP defined as ≧ 10, and low PA defined as ≦ 33.
^ p=0.013

Table II: Commonly cited resilience traits and strategies of senior physicians, their views on teaching and fostering resilience in junior doctors and corresponding selected quotes from interviews.

Traits		
Traits	**Sources**	**Quotes**
Self-awareness	13	"It can be highlighted to become more aware… more self-aware of themselves, their own weaknesses, which areas they may want to be more… aware of." - **J** "I think it is also a little bit about how self-aware you are. Meaning if you are more aware of yourself, and you are more… if you come to terms with your own … flaws for example… usually you tend to not be too upset emotionally when you fail, and maybe that also puts you in a better space, a better place to rebound back … from the failure." - **D**
Optimism	11	"There's a lot of positive thinking and optimism… try(ing) to see the good… the happiness more than the sadness… Constantly remind yourself to look at the positives instead of dwelling in the negatives" – **N** "… when I'm optimistic, the situation doesn't look too bad [laughs] then it's easier for me to persevere and push forward and be tenacious about it" – **L**
Perseverance	10	"I think it builds resilience because you know that once you put your mind and heart to something, that by being more preserving... you can (do it)." – **A** "I think when faced with stress and all that it is… I tell myself that there is always a solution, you just need to persevere, and it's not the end of the world..." - **F**

Motivation	9	"I think in general they are very passionate about their work... and they have strong beliefs in their motivations to do their work" - **C**
Acceptance	8	"So you are faced with a situation you('ve) got no choice, you have to go ahead, you have to go ahead." **-H**
Adaptability	7	"For the more resilient people… they are more open minded… more flexible, they are more malleable, so they can do whatever you want them to do." – **G** "Maybe (people who are less resilient) even feel … like they are thrown overboard if things go a different way. Not adaptable…" **- E**
Internal locus of control	7	"They know what they can control, they know what they cannot control such as the opinions of everyone else who thinks they are very important, you then focus all your limited time, energy and life on something that gives you purpose and fulfilment." **-I**
Strategies		
Strategies	**Sources**	**Quotes**
Reframing Perspective	13	"When you sort of realise that lots of things that can happen to people, for good or bad, you realise that maybe your life isn't so bad in the context of things**."- N** "You just need to go to some parts of Singapore… there are people who are truly suffering from things that are much more basic, things that are much more valuable compared to, for example exams." **- G**
Prioritization	12	"Set time aside for wellness, for your own mental and physical health." – **A** "Number one, take care of your own health and well-being… Plan time together on Chinese New Year, holidays, summer time, time(d) break." **-B**
Seeking support	12	"To have that kind of support, sometimes a listening ear, sometimes just someone to speak to to see what can work or what cannot work… it was the support that they rendered me, through my adversities and the support that they provided for me allowed me to overcome the barriers." **-C**
Reflective practice	11	"Sometimes you get failures, but because you reflect backwards and say: I've already got 5 or 6 successes, 1 failure? I will get up, I will rise up, and I will meet the next challenge again." **-M**
Self-improvement via Learning	9	"Bad experiences you can either learn from it or you can really be affected badly by it." **-E** "One thing that helps you get through the day is that you are always learning, there's always something to learn." **-K**
Setting boundaries	8	"It is important to be resilient, but I think it is also important to recognize that… you recognize your own limit and recognize when you know, you have to say no, and when to say no and when to take care of yourself." **- F**

Spiritual practises	7	"… for me, I suppose the foundation of who I am and what I do is (my) belief in God."**-O**
Teaching and Fostering Resilience		
View		Selected Quotes
Fostered via day-to-day lived experience		"Resilience usually is an experience. Throughout life, people learn from life experience. But you can teach a person, give life examples (of experiences) ... Provided the person is really going to learn it … or not' **- H** "Resilience cannot be taught, like a theory, like a lecture… That's the only way to build resilience, as opposed to teaching resilience - it's a process, building up process, character-building process. So it takes time… to build up your character, you need the challenges, the scenarios that create the challenge or a stressor. Then you can build up resilience." **- M**
Mentoring Relationships		"The ability to do so is really dependent on the support network that they have and having the right guidance on how to turn less-than-ideal experiences to something positive." **- K** "...it would be useful for them to seek their own mentors that they are comfortable with… when I was younger in my career, I recognize that I need a mentor, because not everything should be learnt through successes and failures. Sometimes you gain a lot of wisdom looking at someone else's journey and sharing with that person." **- C**
Individual's lived experience and receptivity to learning		"I think everything can be taught, just that some people will be more receptive to it than others due to their life experiences... Of course, some people are more resilient than others by nature because of their personality, they could be more persevering" **-A** "If we have role models who teach all these things, that helps… If you teach these things… the first step (however) is how much they observe. You can demonstrate all of it, but the person only notices 20%, you are going to have some problems." **-I** 'We share our lessons with young doctors. Some respond, some don't. You try your best but you can't control the response from the other side' **- O**

*Alphabets A-O indicate the individual respondents and the specific quotes from their interviews.

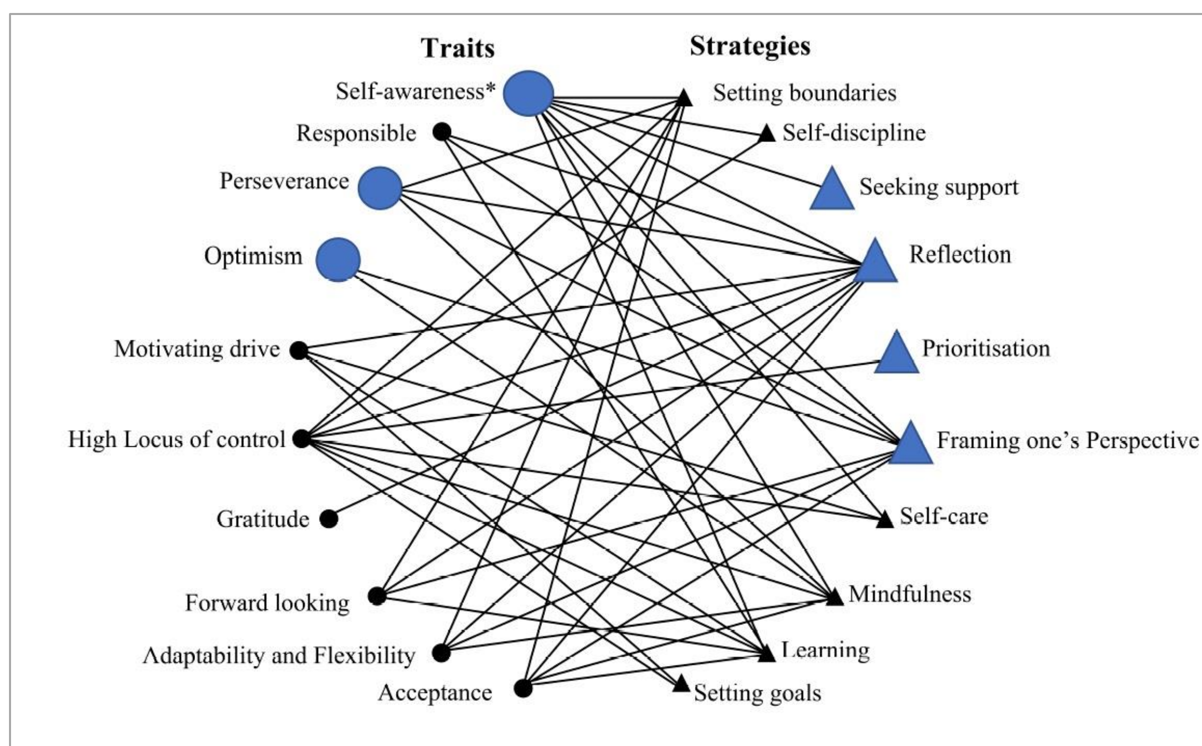

Fig. 1: Inter-relationships between Resilience Traits and Strategies.

APPENDIX

Supplementary Material

Interview Guide

1. What do you think resilience is about?

   a) What helped you cope with problems at work and outside work?

   b) How can a physician remain emotionally healthy and satisfied? What are the strategies used by yourself and the colleagues whom you consider resilient?

   c) If a junior doctor asked you what he/she could do to prevent burnout: What advice would you give? What are the mistakes you made earlier in your career which can be avoided by our junior doctors?

2. Think of someone whom you do not consider resilient. What are the character traits or behaviour they exhibit which made you conclude that they are less resilient?

3. Do you believe that resilience can be taught/fostered?

   a) If yes, how do you think resilience it can fostered amongst our junior doctors?

   b) What aspects can be taught/fostered?

   c) If no, why are some individuals more resilient than others?