

**TITLE PAGE – Resilience on the Run – an evaluation of a wellbeing program for medical interns**

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### **Abstract**

*Objective:* To evaluate the acceptability and effectiveness of a resilience and wellbeing program designed for junior doctors

*Methods:* A prospective cohort study of 24 medical interns at a teaching hospital in regional Queensland with a control group of 29 medical interns at a second teaching hospital in regional Queensland. Survey instruments to assess psychological distress, the ProQOL and K10, were completed at baseline, at the completion of the wellbeing program, and three months after the completion of the wellbeing program at both sites.

*Results:* The intervention site had an older cohort and fewer participants had a regular GP compared to the control site. Both groups had moderate levels of psychological distress. Insufficient numbers of participants completing the instruments at the two sites meant that it was not possible to demonstrate differences between the groups, however the trends were promising. Qualitative evaluation data supported these trends, indicating that the Resilience on the Run program was positively received and provided useful skills to junior doctors.

*Conclusion:* Wellbeing programs benefit medical interns; introducing new knowledge and skills for effectively identifying and managing personal and workplace stressors that can contribute to psychological distress.

### **1. What is known about the topic?**

Junior doctors experience high rates of psychological distress and burnout.

## **2. What does this paper add?**

This study demonstrates that resilience programs are positively received by junior doctors and can introduce new knowledge and skills to manage personal and workplace stressors based on qualitative data.

## **3. What are the implications for practitioners?**

System-level interventions should be considered as one strategy to reduce psychological distress in junior doctors.

## **Introduction**

In 2013, *beyondblue* released a national study reporting on the mental health of doctors and medical students that starkly outlined the Australian situation.<sup>1</sup> Australian doctors experience higher rates of psychological distress, anxiety and depression compared to the general adult population. Junior doctors are particularly vulnerable, with almost half of all young Australian doctors suffering from burnout.

‘Burnout is a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job’ characterised by emotional exhaustion, depersonalisation and reduced self-efficacy.<sup>2</sup> It is closely linked with compassion fatigue and both are closely linked to reduced empathy in patient care delivery and to professional quality of life in physicians.<sup>3</sup>

The findings of the *beyondblue* study confirms that the Australian data reflects the international literature.<sup>4</sup> With increasing evidence that doctors’ wellbeing also has a direct impact on patient care, there is a further imperative to address these issues. High burnout scores have been associated with increased self-perceived medical errors, reduced work hours and increased suicide ideation.<sup>5</sup> Improving the health of health professionals has, therefore, been added as the ‘quadruple aim’ with physician

wellness being proposed as the missing quality indicator vital for quality health care.<sup>6,7</sup>

Despite the increasing evidence of the presence of mental health issues that doctors face, doctors continue to have difficulties accessing health care for themselves.<sup>8</sup> Stigma associated with mental illness, including fear that mental health issues will be perceived as a weakness further reduces help-seeking.<sup>9</sup>

Given the potential implications for patient care, medical professionalism and the sustainability of the health care system, there is an urgent need to develop and evaluate interventions to reduce rates of burnout and psychological distress, especially for junior doctors in Australia.<sup>1,10</sup> Internationally, interventions that have been evaluated include mindfulness, stress management, self-care training, communication skills training, and small group discussions.<sup>5</sup> While acknowledging that doctors are, as a group, extremely resilient,<sup>11</sup> there remains a need to better understand the acceptability and effectiveness of such programs designed to enhance Australian junior doctors' wellbeing.

This paper evaluates a wellbeing pilot intervention, 'Resilience on the Run', that was delivered to medical interns working in regional Queensland.

## **Methods**

### *The program*

Resilience on the Run (RoR) program is an innovative, evidence-based program specifically designed for junior doctors with the purpose of developing lifelong skills to improve doctor's resilience and wellbeing. It empowers them to impart this knowledge to their peers and colleagues, enabling effective peer-to-peer teaching. RoR specifically addresses issues that young doctors face using an interlinked web of content that develops both knowledge and skills covering ten themes (Box 1) to build

and support the resilience of junior doctors. Using multimodal teaching and learning techniques that draw on prior teaching in medical school, RoR grounds these skills with competencies specifically required in the new workplace to manage the personal and interpersonal issues that regularly confront the junior doctor. The program includes a focus on mindfulness, its scientific foundations, skills for dealing with difficult interpersonal communication, role-play scenarios for managing difficult clinical scenarios and information about how to seek professional support, highlighting the potential barriers. Mindfulness refers to a quality of awareness that includes the ability to intentionally pay attention in a particular way, in the present moment, and nonjudgmentally.<sup>12</sup>

RoR consists of four ninety-minute group sessions delivering ten integrated steps towards resilience (Box 1). RoR was delivered by a qualified psychiatrist with experience in wellbeing coaching who designed the evidence-informed sessions. The program was offered in the second half of the intern year.

INSERT BOX 1

### **Box 1. Resilience of the Run Program**

#### **Ten integrated steps towards enhanced resilience**

1. Explanation of mindfulness and empowerment through self-awareness
2. Practical mindfulness exercises and meditations
3. Evidence behind the use and effectiveness of mindfulness
4. Application of these strategies to the intern's work
5. Learning better/healthier/more effective strategies to deal with difficult interpersonal communication through discussion and role play
6. Sharing and discussing difficult work-related experiences while in a safe environment
7. Understanding burnout and compassion fatigue
8. Identifying (personal) risk factors for burnout and compassion fatigue
9. Information to enhance peer support
10. Resources highlighting available support and discussion of perceived barriers that might prevent the use of this support

All sessions were designed to be interactive and focused on real life scenarios with an emphasis on creating an atmosphere in which the interns felt safe enough to share their experiences and learn. A variety of mindful exercises were included throughout the program.

The first session was introductory with exercises to enhance self-awareness, an explanation of mindfulness and examples of how an intern could integrated these practices with their work. The second session focused on how self-awareness can improve effective communication and professional behaviour. Session three concentrated on awareness of burnout and compassion fatigue, including how to identify personal and professional risk factors. The final session reviewed the previous topics, highlighting aspects of resilience and providing practical resources about support relevant to doctors, emphasizing how perceived barriers can hinder help-seeking.

#### *The study*

For this project, the RoR program was implemented at a teaching hospital in regional Queensland in 2015. It was available to all interns and run during protected teaching time at no cost to participants. To measure the effect of this program, a group of interns at another teaching hospital in regional Queensland was also recruited. This intern group received their usual teaching program. Ethics approval was obtained

from the Darling Downs Hospital and Health Service Human Research Ethics Committee (HREC/15/QTDD/29).

Baseline demographic data were collected including participants' gender, age, marital status, cultural background, first language, whether they had a GP, and previous diagnosed mental illness. Psychological wellbeing was assessed using Professional Quality of Life scale Version 5 (ProQOL)<sup>13</sup> and Kessler Psychological Distress Scale (K10).<sup>13</sup>

ProQOL assesses compassion satisfaction (CS)/fatigue (CF), burnout (BO), and secondary traumatic stress (STS) relating to work environment with a 30 item questionnaire. The score for CF is usually <44, BO > 56 and STS > 56.<sup>13</sup> K10 is a measure of psychological distress. It has ten questions each scored on a Likert scale from one to five. The cut-off scores categorised psychological distress as low (10-15); moderate (16-21); high (22-29); and very high (30-50).<sup>14</sup>

Data were collected anonymously at baseline (T0), at conclusion of the program (T1), and three months after conclusion (T2) with each individual tracked over time by a unique code. Data were analysed using SPSS Version 21.

A short evaluation survey was given to all participants at the completion of each session. The evaluation form contained five statements that could be rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Three questions invited free text responses. These questions examined the perceptions of the interns regarding their acquisition of practical skills and strategies as well as any suggestions for future improvements.

## **Results**

### Demographics

At baseline, 24 participants at the intervention site and 29 at the control site completed the surveys. Both groups had similar demographics. All had graduated from an Australian medical school. No significant difference in gender, marital status, English as first language and the presence of a previous mental health illness (Table 1) was identified. However, there were significantly more younger participants aged 20-25 years in the control group. Significantly more participants in the control group had a regular general practitioner.

INSERT TABLE 1

**Table 1 – Demographic data of participants**

	<b>Intervention group</b>	<b>Control group</b>	<b>P value<sup>§</sup></b>
<b>Total number</b>	24	29	
<b>Age (years)</b>			0.037*
20-25	6	18	
26-30	13	9	
31-35	2	1	
36-40	2	1	
41-45	1	0	
<b>Gender</b>			0.103
Female	13	9	
Male	11	20	
<b>Marital status</b>			0.461
Single	9	16	
In relationship	12	11	
Defacto	2	2	
Married	1	0	



<b>Language first spoken</b>			0.194
English	17	25	
Other	7	4	
<b>Medical school training</b>			0.20
Queensland	22	29	
Other Australian state	2	0	
International	0	0	
<b>Has a regular GP</b>			0.014*
Yes	8	20	
No	16	9	
<b>Last time attended GP</b>			0.679
Within last 6 months	6	10	
6-12 months	8	6	
12-24 months	5	5	
over 2 years ago	5	8	
<b>Mental illness diagnosed in last 10 years</b>			0.715
Yes	5	4	
No	19	25	

<sup>§</sup> Fisher's exact test

\* significant with  $p < 0.05$

#### *Outcome measures with survey tools*

Prior to the intervention, there was a difference in the K10 results of the two groups. The intervention group scored higher levels of distress than the control at baseline. (Table 2) Some participants failed to complete their surveys at each of the three time points in both groups. (Tables 2 & 3) It was not possible to perform a statistical comparison (using paired t-tests) of the effect of the intervention at each of the two sites as the number of individuals completing the testing at T0 and T2 was too small. Many participants who completed their forms did not add their personal code to enable their data to be matched.

INSERT TABLE 2

**Table 2 – K10 results for Control and Intervention Groups**

**Number of completed responses K10 responses received at each of the three time points**

T0 (beginning of study), T1 (end of intervention) and T2 (3 months after intervention)

K10	T0		T1		T2	
	I	C	I	C	I	C
Number of completed responses	23	29	20	24	20	21
<b>Mean K10 scores of each group</b>	19.13	16.97	19.2	17.83	19.35	17.05

**K10 Matched responses where the same participant completed their responses at both T0 and T2 timepoints.**

	Number of matched responses at <u>both</u> T0 and T2	No change in K10	Decrease in K10	Increase in K10
Intervention	N=14	7	5	2
Control	N=6	5	1	0

Considering the groups as a whole, there was no significant change in the level of distress between the intervention and control sites after the intervention (Table 2). Both groups demonstrated a moderate level of psychological distress based on K10 score throughout the study. When considering the fourteen participants in the intervention groups who completed their K10 for T0 and T2, five (36%) had a reduction in their level of distress, whereas two had an increase. Of the six participants in the control groups who completed their K10 for T0 and T2, only one (17%) had a reduction in their level of distress and none had an increase in distress.

INSERT TABLE 3

**Table 3 – ProQOL results for Control and Intervention Groups**

Number of completed responses received at each of the three time points

T0 (beginning of study), T1(end of intervention) and T2 (3 months after intervention)

And the number with compassion fatigue, burnout, and secondary traumatic stress.

ProQOL	T0		T1		T2	
	I	C	I	C	I	C
<b>Number of completed Compassion Scale</b>	<b>23</b>	29	<b>20</b>	24	<b>20</b>	21
<b>Number with Compassion fatigue (score &lt; 44)</b>	<b>5</b>	9	<b>4</b>	7	<b>5</b>	3
<b>Number of completed Burnout Scale</b>	<b>23</b>	29	<b>20</b>	23	<b>20</b>	21
<b>Number with Burnout (score &gt;56)</b>	<b>7</b>	5	<b>5</b>	6	<b>3</b>	5
<b>Number of completed Secondary Traumatic Stress Scale</b>	<b>24</b>	29	<b>20</b>	24	<b>20</b>	21
<b>Number with Secondary Traumatic Stress (score &gt;56)</b>	<b>4</b>	7	<b>4</b>	7	<b>2</b>	8

Considering ProQOL results (Table 3), there was a decrease in burnout in over half the participants in the intervention group, who completed their burnout subscale for T0 and T2, whereas there was no change in the control group. There was also a decrease in secondary traumatic stress for half the participants in the intervention group, with no change in the control group. However, there was a reduction in compassion fatigue to a third of the control group whereas the intervention group showed no such change.

*Evaluation data*

Both quantitative and qualitative evaluations were gathered from the intervention group. Over 90% of participants completed their evaluation forms after each session. Their comments were generally positive, “*Ideas are presented in an impactful way*”, “*Great concepts/ideas presented*”, with close to 90% agreeing that “The session increased my awareness of positive strategies I can use to maintain my mental health and wellbeing” at the end of the course.

The evaluation survey questions focused on some of the key learning issues of RoR. Overall, the participants agreed that each of these topics was effectively addressed during the four session course, with over 90% of participants agreeing or strongly agreeing that the sessions addressed each of these specific topics in at least one session during the course. Not every topic was covered in depth in each session and this resulted in a neutral rating for the topics that were not the focus of that specific session. This variability in responses supports the authenticity of the participants’ ratings in these evaluations.

INSERT TABLE 4

**Table 4 Evaluation survey responses for intervention group using Likert scale rating**

Question	Response	Session 1 N = 25*	Session 2 N = 23	Session 3 N = 23^	Session 4 N = 22
Q1: The session increased my awareness of positive strategies I can use to maintain my mental health and wellbeing.	strongly disagree	0	0	0	0
	disagree	1	0	0	1
	neutral	2	3	3	1
	agree	13	16	15	13
	strongly agree	9	4	5	7

Q2: The session increased my knowledge about the risk factors for stress and burnout.	strongly disagree	0	0	0	0
	disagree	3	1	0	0
	neutral	4	6	3	2
	agree	14	13	12	14
	strongly agree	4	3	8	6
Q3: The session has resulted in me using mindfulness and other strategies in my workplace to maintain my mental health and wellbeing.	strongly disagree	1	0	0	0
	disagree	0	0	0	2
	neutral	7	7	4	2
	agree	13	14	12	13
	strongly agree	4	2	7	5
Q4: The session has increased my awareness of when I may need to seek external support to maintain my mental health.	strongly disagree	0	0	0	0
	disagree	1	0	0	2
	neutral	14	7	5	2
	agree	8	14	11	13
	strongly agree	2	2	7	5
Q5: The session has provided me with the knowledge and skills to better support any colleagues with stress and other mental health issues.	strongly disagree	0	0	0	0
	disagree	0	0	0	1
	neutral	6	8	1	1
	agree	15	13	14	16
	strongly agree	2	2	7	4

\* Session 1: n=23 for statement 5 – 2 participants failed to complete Q5 which was on the back of the page  
^ Session 3: n=22 for statement 5 - 1 participant failed to complete Q5 which was on the back of the page

The free text responses in the evaluations demonstrated that many interns appreciated the explanation of the science underpinning the practice of mindfulness, which made it “*research proof*”. The practical exercises in mindfulness and meditation were described as very helpful. In particular, they appreciated learning how to integrate mindfulness in the workplace. Discovering this connection was important to them. Mindfulness skills were singled out in the evaluations for the most consistent reported beneficial skill that was taught to create a healthier mindset. Even though some interns had previously been trained in mindfulness, it had not been contextualised for them within the clinical space. Similarly, using clinical scenarios to situate the practical training enabled the interns to understand how their self-awareness and communication skills could be used in their workplace e.g. when dealing with a difficult colleague.

INSERT BOX 2

**Box 2 Evaluation responses (free text) for intervention group**

<b>Concept (Numbers relate to the steps in Box 1)</b>	<b>Participants were asked what they found useful in the sessions.</b>
<b>Mindfulness and Meditation skills (2)</b>	“Mindfulness has certainly helped improve stress” “Practical component to demonstrate meditation” “Learning the difference between short and longer meditations”

<b>Evidence base for mindfulness</b> (3)	<p>“Examples of effect of meditation”</p> <p>“Science behind meditation/ mindfulness”</p> <p>“Refreshing the science behind mindfulness”</p> <p>“Neuroplasticity”</p>
<b>Self-awareness</b> (1)	<p>“The power of insight”</p> <p>“Positivity changes things”</p> <p>“Awareness of how stress affects our body”</p> <p>“Importance of being aware of situations (mindfulness)”</p>
<b>Strategies for difficult clinical scenarios</b> (4,5)	<p>“Strategies to de-escalate a tense situation with a difficult patient/colleague”</p> <p>“Discussion of strategies for empathy”</p> <p>“Relating mindfulness to medicine”</p> <p>“Scenarios to discuss ‘frustrating’ communication”</p>
<b>Providing resources for future support</b> (10)	<p>“List of websites and support resources for me to go to when I need help”</p> <p>“Really useful information”</p> <p>“Important resources/support organisations were shared”</p> <p>“Gave me information that was new to me”</p>
<b>Learning to self-monitor health</b> (7)	<p>“Detecting burnout and compassion fatigue and strategies to deal with them”</p> <p>“Awareness of own health”</p> <p>“Examples/techniques to feel what it is like to be mindful”</p> <p>“Strategies to overcome compassion fatigue”</p>
<b>Understanding the importance of sharing and peer support</b> (6,9)	<p>“Seeing that other people are in the same situation as myself”</p> <p>“Learning that other interns are going through a similar experience” “Hearing others’ situations and issues (normalizes my problems)”</p> <p>“Discussing as a group”</p>
<b>Program climate</b> (6)	<p>“Safe environment”</p> <p>“Proper time to eat/learn”</p> <p>“Semi-circle seating arrangement”</p> <p>“Enquiry about certain tactics I use and validation”</p>

<b>Presenter acceptance</b>	“Clear presentation” “Knowledgeable and good attitude” “Friendly, approachable presenter” “It felt like someone cared about our experiences”
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During the training sessions, the interns often volunteered personal experiences that informed their role play of various scenarios. This helped others appreciate the commonality of their experiences when they felt that their encounters resonated with those of others. This was comforting for the interns. It also empowered the interns to be more supportive of each other into the future. This enablement of peer support was an important aspect of the training. The bonding between the cohort was strengthened through their shared experiences. They improved their ability to self-monitor their health for burnout and compassion fatigue and they found the practical resources provided to support their access for support helpful.

## **Discussion**

This study provides valuable insights into a relatively short intervention developed to enhance the resilience of Australian interns. The program was developed with a deep understanding that burnout in the health workforce is situated at the interface of the job-person fit. While recognising resilience is a contemporary construct that continues to evolve, this study framed resilience as “a dynamic, evolving process of positive attitudes and effective strategies”.<sup>15</sup> Resilience training is not designed to improve the ‘toughness’ of an individual so that they are more capable of withstanding a difficult workplace. It is acknowledged that many stressors that junior doctors experience are external and inevitable stressors. Resilience training does aim to enable individuals to develop healthier strategies to respond to stressors experienced within the workplace with the hope of reducing the risk of burning out while also enhancing their capacity to change unhealthy workplace practices. Resilience training cannot mitigate all



stressors. Such training will never replace other multi-pronged systemic workplace interventions that are designed to embed a culture that supports health professional wellbeing.

This evaluation of the pilot for Resilience on the Run is one of very few evaluations of a workplace intervention delivered to interns within an Australian setting. All interns were encouraged to attend, in contrast to other studies, where participants often self-select for such training. The RoR program was readily available to all interns and accessible, because it was provided during protected work time for no cost. The evaluation responses were only completed by the intervention group as an evaluation of the pilot program. These self-reports were very positive. This study found RoR to be a successful pilot that achieved its stated purpose with interns acknowledging their learning of positive strategies through the ten integrated steps that can support their wellbeing (Box 2).

There were limitations to this study. The small participant numbers and even smaller number of paired responses meant that it was not possible to demonstrate a statistical difference using the survey results. The main reason for this was that many participants, especially in the control group, did not provide their individual code to enable matching of their results across the time periods. It seems most likely that this was inadvertent, because if a person had not wished to participate, it would have been easier to not return the form. Participants may have forgotten to add their code or forgotten their code.

Although most interns in the intervention group attended all four sessions, some interns missed out on one or two sessions due to shift work or time off. Although the evaluations were self-reports, the response rate for these evaluations was high. They were deidentified so there was no benefit to the participants if they provided a positive evaluation.

Previous systematic reviews investigating interventions for managing occupational stress and burnout in doctors using mindfulness, cognitive behavioural and other relaxation interventions have demonstrated benefits for participants.<sup>5,16</sup> Most of the original studies in these reviews have been undertaken in major metropolitan centres. There is a paucity of research evaluating the impact of programs for interns in regional areas. As with this RoR study, other evaluations have also been limited by their reliance on self-report and their lack of long-term follow up.

Both intervention and comparison sites had moderately high rates of psychological distress at baseline and throughout the study. Previous research has indicated younger doctors and doctors based in rural areas have higher rates of psychological distress which may have contributed to this finding.<sup>1</sup>

While average K10 scores did not reduce in either the intervention or control groups, there were positive trends of reduced burnout and reduced secondary traumatic stress levels in the intervention group. This finding is consistent with similar studies. Ireland et al reported a significant reduction in stress and burnout with a ten-week mindfulness course, though there was no follow up after the training ended.<sup>17</sup> A five-year follow-up study of medical students trained in mindfulness also demonstrated that participants continued to use mindfulness or relaxation exercises into the future.<sup>18</sup>

Mental health problems remain stigmatised in the medical workplace.<sup>1,9</sup> This study demonstrates that programs such as RoR can help break the silence, reducing the isolation experienced by junior doctors. By enabling personal help-seeking and facilitating peer-support, this program provided the participants with skills and strategies to start the conversation in the future. Developing an awareness of their common experiences strengthened the group's feeling of collegiality.

One of the strengths of RoR was that the course was presented by a medically trained person. Drawing on clinical narratives to contextualise their learning to their

workplace experiences enabled participants to safely share their personal experiences and learning. This enhanced the group's engagement and bonding during the sessions. The RoR program is designed so that a train-the-trainer approach can be used for dissemination of the program beyond Queensland, into the future.

## **Conclusion**

This pilot study demonstrated that the 'Resilience on the Run' program was well accepted by the interns. The program enhanced resilience and supported doctors' wellbeing by providing practical skills and strategies for integrating these into their working life. Future evaluation studies with a larger cohort and longer follow up is recommended to ascertain the full impact of the 'Resilience on the Run' program. There is also a place for considering the development of similar programs designed for more senior doctors.

Introducing programs to support clinician wellbeing early in the physician's career is an important vital step in establishing positive cultural change. Programs such as 'Resilience on the Run' are only one part of the solution to the epidemic of burnout and psychological distress in junior doctors. Such targeted interventions must be combined with systemic change designed to establish a healthy workplace.<sup>19</sup> The value of these interventions lies beyond enhancing the wellbeing of individual doctors; they will benefit the health care team, and support the quality of care delivered to patients.

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## **Resilience on the Run – an evaluation of a wellbeing program for medical interns**

### **Abstract**

*Objective:* To evaluate the acceptability and effectiveness of a resilience and wellbeing program designed for junior doctors

*Methods:* A prospective cohort study of 24 medical interns at a teaching hospital in regional Queensland with a control group of 29 medical interns at a second teaching hospital in regional Queensland. Survey instruments to assess psychological distress, the ProQOL and K10, were completed at baseline, at the completion of the wellbeing program, and three months after the completion of the wellbeing program at both sites.

*Results:* The intervention site had an older cohort and fewer participants had a regular GP compared to the control site. Both groups had moderate levels of psychological distress. Insufficient numbers of participants completing the instruments at the two sites meant that it was not possible to demonstrate differences between the groups, however the trends were promising. Qualitative evaluation data supported these trends, indicating that the Resilience on the Run program was positively received and provided useful skills to junior doctors.

*Conclusion:* Wellbeing programs benefit medical interns; introducing new knowledge and skills for effectively identifying and managing personal and workplace stressors that can contribute to psychological distress.

### **1. What is known about the topic?**

Junior doctors experience high rates of psychological distress and burnout.

### **2. What does this paper add?**

This study demonstrates that resilience programs are positively received by junior doctors and can introduce new knowledge and skills to manage personal and workplace stressors based on qualitative data.

### **3. What are the implications for practitioners?**

System-level interventions should be considered as one strategy to reduce psychological distress in junior doctors.

**TITLE PAGE – Resilience on the Run – an evaluation of a wellbeing program for medical interns**

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