


Does teaching Optimism lower Burnout in residency training– a pilot study

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ABSTRACT

Background: Residents frequently experience burnout. Multiple interventions to decrease the risk of burnout have had inconsistent results. In non-medical settings, improving optimism promotes a positive outlook and enhances well-being. Thus, psychological interventions that improve optimism could have potential to decrease the risk for burnout.

Objective: Using Lazarus' Ways of Coping as an organizational framework, this intervention sought to evaluate the impact of an optimism curriculum on residents' burnout.

Methods: Thirty-six Internal Medicine residents participated in an optimism improvement program from November 2019 to April 2020. We determined pre- and post-curriculum measures of optimism, happiness, and burnout with validated surveys. The Optimism Curriculum was comprised of three one-hour long sessions, which included lectures, group and self-reflective exercises. A post - curriculum evaluation rating the effectiveness of the program was administered separately.

Results: Thirty-four out of thirty-six residents completed the post curricular surveys. Individuals with low optimism scores had a higher score for burnout compared to those with higher optimism scores. The post-intervention survey showed numerical improvement in optimism, happiness and burnout, although these changes were not statistically significant. The post-intervention survey showed a decrease in the measure of burnout; however, this was not significant ($p = 0.24$) with an effect size of 0.34 (Cohen's d).

Conclusions: Teaching optimism to residents with the objective of decreasing the risk of burnout is feasible and easily integrated into residency education sessions. The encouraging results of this pilot study lay the foundation for additional studies and suggest a practical role for implementing optimism curricula in residency training programs.

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1. Introduction

Physician burnout has emerged as an escalating concern as it can worsen delivery of care due to impairment of physician performance and mental health, as well as an increased risk of suicide. In 2019, the National Academy of Medicine (NAM) highlighted the erosion of clinician wellbeing from occupational stress and high rates of burnout among U.S. physicians and trainees[1]. Over the past

decade, U.S. physician burnout rates have ranged from 40–54%[1], with rates greater than 50% documented among residents[2]. Trainee burnout exceeds other medical professionals, as well as the overall population [1,3]. Burnout is insidious and once established tends to be persistent and possibly even contagious to peers[4].

Coping can be defined as the ongoing cognitive, emotional, and behavioral processes to manage

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well-being in response to encountered situations[5]. Coping strategies can be classified as 1) Problem-focused coping and 2) Emotion-focused coping. Problem-focused coping attempts to circumvent the source of stress while emotion-focused coping attempts to eliminate the emotional distress cued by a stressful situation [6,7]. Optimists are more likely to adopt problem-focused ways of coping, although both strategies can be helpful [6,8].

Optimism refers to a perspective on life and provides a contextual structure for dealing with stressors and guides responses and cognitive framing of stressful events. Optimism has been conceptualized as an explanatory style, a way in which situations can be framed. Under an optimistic explanatory style, negative situations have less effect on future cognition and behavior, and positive situations can be more uplifting for future behavior[9].

Stress management programs and strategies focusing on improving resilience have shown inconsistent results [1,10]. Studies on curricula have primarily focused on mindfulness-based stress reduction and while many have shown reductions in burnout, most studies were not controlled, were subject to volunteer bias, or reported mixed results [1]. There is clearly an urgent need to develop programs that demonstrate consistent effectiveness in decreasing the risk for burnout, particularly in resident physicians. The concept of optimism has recently emerged as a potentially important determinant of how physicians may respond to stressors [1]. There is evidence that improving optimism can help deal with stressors that lead to burnout[11]. Support for this concept has been demonstrated in a recent single-center study in residents showing an inverse relationship between optimism and burnout [12]. Optimism has also been associated with multiple psychological and health outcomes [13,14] and has been shown to be a strong predictor of job burnout. Interventions that increase optimism have been shown to improve life satisfaction, decrease anxiety and disability, and increase health-related quality of life[15]. In addition to organizational interventions, improving individual factors like optimism may be very influential in improving burnout[16].

Based on the existing supporting evidence, we developed a novel and practical educational curriculum to improve optimism and subsequently decrease burnout. Our hypothesis was that a curriculum focused on improving optimism would reduce burnout in Internal Medicine (IM) residents.

2. Methods

2.1. Setting and participants

The University of California, Riverside IM Residency is an ACGME-accredited program based in Riverside, California with 36 residents.

2.2. Curriculum development

IM faculty developed the curriculum based on Lazarus' Ways of Coping as an organizational framework[17]. The faculty voluntarily served as instructors.

The residents underwent three one-hour teaching sessions delivered from November 2019 to April 2020. Exercises were built on broader concepts to enhance self-regulated learners[6]. (Figure 1)

2.3. Outcome measures

Determination of the measures of optimism, happiness and burnout were assessed by previously validated surveys administered before and after the final teaching session. The survey links were emailed to all participants.

Optimism was measured using the revised Life Orientation Test (LOT-R) with higher scores indicating higher optimism [18,19]. The Subjective Happiness Scale was used to assess overall happiness [20]. Burnout was measured using the Dolan single question scale with results dichotomized into the presence or absence of burnout[21].

Survey data was exported to a secure server and de-identified by randomly assigning a 4 digit number. The unique number allowed matching of pre- and post-responses.

2.4. Statistical plan and analysis

Chi-squared tests were performed to assess the percentages of burnout and t-tests were used to compare optimism and subjective happiness scores pre- and post-curriculum. Effect sizes were calculated to assess the magnitude of change[22].

The Institutional Review Board deemed this project as exempt.

3. Results

The baseline survey was completed by 34/36 residents prior to the first session. After the teaching sessions, 34/36 residents completed the final survey. The combined overall response rate for both surveys was 96%.

One-hour Sessions	Description	Ways of Coping Framework ^{5,17}	
		Problem-focused	Emotion-focused
Session 1	Overview – Background, theoretical construct, and demonstrated tools to measure and teach	Positive reappraisal	Acknowledge feelings
	Importance of optimism in the workplace and impact on improving well-being and preventing burnout	Active problem solving	Accepting responsibility
	Group Exercise : Case discussions demonstrating how different situations could be approached in an optimistic manner	Seeking social support Confrontive coping	Avoiding denial and distancing
	Reflective Exercise: Comparing self-evaluative and peer perceptions of each participant’s level of optimism	Active problem solving	Accepting Responsibility
Session 2	Seven habits of optimists: Discussion of reflections, personal beliefs, or rationalizations that inhibit improving optimistic habits	Active problem solving Seeking social support	Acknowledge feelings
	Addressing cognitive distortions: Group discussion of commonly encountered situations	Positive reappraisal	Minimizing self-blame Avoiding denial and distancing
	Reflective Exercise: Thought Record – “putting the thought on trial”	Active problem solving	Acknowledge feelings
Session 3	Summarizing: review of prior session themes – definition, benefits, cognitive distortions, neural basis of optimism and group exercises	Positive reappraisal	Accepting responsibility
	Introduction to mindfulness and demonstration of mindfulness exercise	Active problem solving	

Figure 1. Optimism curriculum description and coping strategies.

Table 1. Results of Optimism curriculum intervention.

	Burnout	Optimism (S.D.)	Happiness (S.D.)
Pre-curriculum	41%	15.9 (± 4.3)	5.1 (± 1.3)
Post-curriculum	26%	17.0 (± 4.4)	5.2 (± 1.2)
P Value	0.24	0.33	0.66
Effect Size	0.34	0.28	0.11

Table 1 displays the results of the teaching program and the outcomes of burnout, optimism and happiness.

There was a numeric trend towards improvement in the measures of burnout, optimism and happiness after the curricular intervention; however, these differences were not statistically significant (Table 1). The effect size of 0.34 by Cohen’s d analysis of our primary outcome of burnout is considered ‘small to medium’ per convention[22].

In exploratory analysis, we classified residents into those who scored in the lowest quartile of optimism (LOT-R scores ≤ 12) and compared them with the highest quartile (LOT-R scores ≥ 18). Burnout in the lowest quartile was 89%; while burnout in the highest quartile was 13% (chi-squared = 10.3, p = 0.0013, effect size = 1.72)[22]. This finding confirms the association between optimism and burnout found in a prior cross-sectional study[12].

4. Discussion

Coping strategies to reduce burnout have been identified by national organizations; however, methods to teach residents these important strategies are lacking [1,7]. We approached this critical need by teaching our residents techniques to enhance optimism. Numerous studies have shown the potential benefits of optimism in addressing many of the obstacles that contribute to burnout. A prior meta-analysis demonstrated the feasibility of

improving optimism with psychological interventions [18]. Optimism has been associated with several problem-focused and emotion-focused mechanisms of coping (Figure 1). Our goal was to explicitly teach residents these approaches to improve their ability to cope with stressors and reduce burnout.

Our novel curriculum introduced the concept that optimism may be a determinant of burnout and may be increased by a practical educational intervention. Unlike previous interventions, our curriculum intervention study utilized a longitudinal prospective design [1,7] and optimistic coping strategies as a conceptual framework for addressing burnout and wellness [5–7,17]. We also incorporated recent recommendations for effective teaching strategies to increase optimism such as in-person classroom interventions, a final assessment shortly after the end of the intervention, and evaluating those who completed the entire curriculum[18].

Limitations of the study include the use of a single specialty residency program and therefore the results may be less generalizable. Our small sample size may have decreased the necessary power to detect a statistical improvement in burnout; however, the effect size of 0.34 is consistent with a recent meta-analysis of effective interventions to improve optimism in nonmedical settings[18]. The sample size required to detect a statistically significant difference was estimated to be 240. This would require recruitment of multiple cohorts over several years given the current size of our residency, or recruitments of study participants from multiple residency programs in future studies. Additionally, the LOT-R may not readily distinguish between dispositional optimism and situational optimism [18,23]. Future curricular improvements may benefit from the

inclusion of the ‘Best Possible Self’ intervention, which in non-medical settings, has been shown to have a large effect size[24].

5. Conclusion

This is the first reported study to determine the feasibility and initial outcomes of teaching residents the coping strategies of optimists with the goal to improve burnout. These encouraging results lay the foundation for future studies and suggest practical ways to improve our optimism curriculum.

Disclosures

The authors do not have any financial interest, benefits or conflicts of interest arising from this work.

Data Availability Statement

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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