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Does Positive Psychology Coaching Improve Trainee Well-Being? Evidence from a Longitudinal Professional Development Coaching Program in a Cohort of Pediatric Trainees

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ABSTRACT

Introduction: Trainee burnout is common and evidence supporting the effectiveness of well-being interventions for this population is limited. We studied the effect of a longitudinal coaching program grounded in positive psychology on measures of pediatric trainee well-being.

Methods: Pediatric interns and fellows (n = 67) were enrolled in a positive psychology coaching program in 2017-2019. Pediatric faculty (n = 23) underwent training and were paired with trainees outside their field of interest. Trainees were surveyed at the beginning and end of the program to assess burnout and well-being, and key skills necessary to achieve well-being.

Results: Thirty-one trainees completed the baseline survey and 30 completed the end of program survey. Professional fulfillment, as measured by the Professional Fulfillment Index, improved after participating in the coaching program (Cohen's d = 0.33, $p = 0.03$). On bivariate analysis, ability to cope was positively correlated with gratitude (r = 0.49, $p = 0.01$), PERMA (r = 0.61, $p = 0.001$), and self-valuation (r = 0.46, $p = 0.01$), and negatively correlated with intolerance of uncertainty (r = -0.46, $p = 0.01$). Burnout was negatively correlated with professional fulfillment (r = -0.65, $p < 0.001$) and self-valuation (r = -0.75, $p < 0.001$). There was no deterioration in scores for trainees who participated in the coaching program.

Conclusion: Our longitudinal coaching program was associated with improvement in pediatric trainees' professional fulfillment, identified possible drivers of well-being on bivariate analysis, and may serve as a roadmap for development of well-being curricula. Our findings suggest that well-being is not merely the absence of burnout, and maintenance of well-being during training may be just as critical as improvement.

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INTRODUCTION

Physicians in training are more likely to experience burnout compared to their age-matched peers [1]. In prior studies, 53-74% of pediatric residents and fellows met criteria for burnout [2, 3].

The Accreditation Council of Graduate Medical Education (ACGME) mandates that programs have the same responsibility to assess and address well-being as they do with other aspects of resident and fellow competency [4]. Despite this mandate, the ACGME does not explicitly define well-being and the lack of evidence-based programs targeting well-being make it challenging for educators to determine which interventions to incorporate into their programs. Furthermore, assessing the impact of a given initiative on trainee well-being can be challenging.

Positive psychology coaching uses a strengths-based approach that emphasizes goal setting and reflection. This method has been used to strengthen coping skills of physicians, mitigate burnout, and improve quality of life [5]. Previous work at our institution with internal medicine residents has shown that a coaching program, grounded in positive psychology, supports trainee well-being and led to increased coping skills in high stress areas [6-8]. These skills led to improved resilience which is protective against burnout [7-8]. Whether this type of a coaching program would show similar benefits in a pediatric trainee cohort is currently unknown. Prior studies examining pediatric residents in a coaching program have either focused on direct observations of clinical encounters [9], or burnout [10], which does not correlate with overall well-being [11]. This is the first study looking at the impact of a positive psychology coaching program specifically in a cohort of pediatric trainees.

We implemented a longitudinal professional development coaching program in a cohort of pediatric trainees aimed at promoting well-being and mitigating burnout, while meeting

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accreditation requirements. The Professional Fulfillment Index [12] (PFI) is a relatively new measure that detects recent changes related to specific interventions. It examines both positive and negative aspects of well-being, and is ideally suited to measure the pre and post intervention effects on trainee well-being. Using principles of positive psychology, we hypothesized that this coaching program would improve pediatric trainee well-being as measured by the PFI, allow educators to identify drivers and indices of well-being by examining correlations on bivariate analysis, and generate evidence supporting a roadmap for those who are implementing well-being curricula.

METHODS

This was a prospective, pre-post study of pediatric interns and fellows at Mass General for Children who were enrolled in the Professional Development Coaching Program (PDCP) during the 2017-19 academic years. This study was approved by the IRB at MassGeneral Brigham.

Goals and Program Development

The PDCP was implemented to establish a safe environment for pediatric trainees to reflect on their performance, understand how to optimize their strengths to overcome challenges and stressors, and set goals to support their personal and professional development. This strengths-based coaching model followed the principles of positive psychology and was designed to be non-evaluative and trainee-driven [13]. The goal of the program was to improve the well-being of pediatric trainees who participated in a positive psychology coaching program. The required resources to implement a coaching program and the expected outcomes can be seen in the logic model represented in **Table 1**.

Table 1: Logic Model for Professional Development Coaching Program

Input	Output	Outcomes
One person to champion the program	Train coaches in positive psychology coaching	Improve trainee well-being and professional fulfillment (short)
One administrator	Quarterly meetings between coach and trainee	Identify drivers and supports needed for trainee well-being (mid)
Volunteer coaches (1 coach:2 trainees)	Baseline and post intervention surveys	Create a roadmap for educators to follow when creating and implementing well-being curricula as mandated by the ACGME (long)
Recruitment of coaches each spring		
Positive psychology curriculum		

Goal: to improve the well-being of pediatric trainees who participate in a positive psychology coaching program

Participants

Coaches were members of the Department of Pediatrics teaching faculty, and all had clinical responsibilities. Twenty-three coaches were successfully recruited via email invitations and did not receive any renumeration. Trainees included pediatric interns and fellows in the main subspecialties at our institution (pulmonology, gastroenterology, endocrinology, and critical care). Resources were initially limited; therefore, we could not include all pediatric interns and residents. Interns were selected with the aim of showing a proof of concept, and to ensure maximal engagement with the program. We hypothesized that interns would be more likely to engage as newcomers to residency, rather than introduce a new program to 2nd and 3rd year residents who had already established relationships and coping strategies. Furthermore, by choosing interns, rather than 2nd or 3rd year residents, coaches and interns had the opportunity to engage in a 3-year longitudinal experience. Given the small number of pediatric fellows (PGY4 – PGY6), all were eligible to participate. All trainees were enrolled and given the opportunity to opt out. There were 38 pediatric interns and 28 pediatric fellows who participated in the coaching program; one trainee opted out.

Coach Training

All coaches participated in three hours of training designed by a subject matter expert as previously described [6]. Coaches were introduced to the core concepts of coaching and positive psychology [14] using hands-on experiential coaching exercises [6]. Training focused on reflective listening, the use of questions to promote self-reflection, setting goals that support their vision of success, and articulating positive emotions and strengths, as opposed to emphasizing negative emotions and weaknesses.

Coach-Trainee Matching

Upon completion of training, coaches were assigned one to two trainees. Career interests were intentionally mismatched to create a safe space for the trainee and to prevent the coach from defaulting to a mentoring conversation. Coaches did not serve in a longitudinal supervisory role. Coaches and trainees met at the beginning of the academic year, where the program was introduced, and expectations were reviewed. There were no consequences for not meeting with their coach.

Coaching Sessions

Trainees were asked to meet with their coach quarterly. These meetings were voluntary and expected to last about one hour. Session guides [6] were created for each meeting, including questions to engage the trainee in discussion, strategies to promote goal setting, and descriptors of the positive psychology exercise linked to that meeting. Each session began by checking in with the trainee to see how things were going. Trainees were encouraged to discuss something that had recently gone well as opposed to focusing on what has been a struggle. Positive psychology exercises included setting goals for the year, finding and building strengths, choosing an upcoming challenge or goal and applying techniques to achieve that goal, and reflecting on positive emotion, engagement, relationships, meaning, and accomplishment using the PERMA model [15]. All discussions were confidential unless the coach was concerned for the safety of the trainee or their patients.

Table 2: Outcome Measures

Outcome Measure	Definition
Primary Outcome	
Professional fulfillment index (PFI) [12]	Assesses burnout and professional fulfillment over the previous 2 weeks related to specific interventions
Secondary Outcomes	
PERMA [15]	Depicts well-being across multiple domains including positive emotion, engagement, relationships, meaning, and accomplishment
Intolerance of uncertainty score (IUS) [16]	Relates to the trainees' overall sense of worry and anxiety
Hardiness-Resiliency score (HRS) [17]	Aids in differentiating between those who develop stress related problems versus those who remain healthy under stressful situations
Measurement of Current Status score (MOCS) [18]	Assesses the ability of trainees to cope with and thrive in stressful situations
Self-valuation score [19]	Prioritization of personal well-being and response to imperfections and errors. Prioritizing self-care and using a growth mindset approach to medical errors may combat burnout
Gratitude Questionnaire [20]	Grateful people have more positive emotions and life satisfaction, and less depression and anxiety

Program Evaluation and Outcome Measures

Survey data collection (**Appendix A**) occurred during the 2017-19 academic years. Data for analysis was aggregated across years. Baseline data were collected in September of the academic year to capture an internship or fellowship baseline, rather than measure what their burnout and professional fulfillment were prior to starting their training program. An end of year survey took place in May. Participants were surveyed to assess burnout and professional fulfillment, their program experience, as well as key skills considered necessary to support well-being. All surveys were conducted online using REDCap. No renumeration was offered.

The primary outcome, the PFI, assesses burnout and professional fulfillment over the previous 2 weeks, facilitating assessment of recent interventions [12]. Secondary outcomes were chosen to explore various drivers and indices of well-being and included the PERMA score which depicts well-being across multiple domains including positive emotion, engagement, relationships, meaning, and accomplishment [15], the Intolerance of Uncertainty score (IUS), the Hardiness-Resiliency score (HRS), the Measurement of Current Status score (MOCS), the self-valuation score, and the Gratitude Questionnaire (**Table 2**).

Statistical Analysis

Survey data were analyzed using Stata 16 (StataCorp, College Station, Texas) using aggregate data of participants across years. To measure the change in the trainee's perceptions on various outcome measures, dichotomized items were created from specific survey questions. For each item, bivariate comparisons by survey type (baseline survey vs. end of program survey) using $\chi 2$ tests were conducted. These $\chi 2$ tests featured unpaired data, allowing for all responses to be included in the analysis. To compare the seven indices (Gratitude, HRS, MOCS, PERMA, Self-Valuation, IUS, and PFI) over time between baseline and end of program, total scores for each index were calculated, and either paired t-tests or Wilcoxon signed-rank tests were conducted. Paired t-tests or Wilcoxon signed-rank tests, selected based on the parametric or non-parametric nature of the data, featured paired data, which reduced the data set available. To measure the association between item and index scores, which are continuous variables, pairwise correlations or Spearman's rank correlations were conducted using end of program survey data. Pairwise correlations or Spearman's rank correlations, selected based on the parametric or non-parametric nature of the data, featured all responses to the end of program survey being included in the analysis. Finally, to determine the association of multiple variables on selected index scores and items, multivariate regression models were used, which featured all responses to the end of program survey being included in the analysis.

RESULTS

Thirty-eight pediatric interns and 28 fellows were matched with a faculty coach. Fifty-six percent met with their coach 3 or more times during the year, 10% met 2 times, and 34% met only once. Baseline survey data were available for 31 (47%) of the trainees who participated in the coaching program, while end of program data was available for 30 (45%) trainees. Paired data were subsequently available for 22 trainees (33%). Based on demographic data (gender, race, and ethnicity), there was comparability between responders and non-responders (**Table 3**). Comparisons examining differences between interns and fellows and by cohort year, showed no statistical differences between groups ($p = 0.25$ and 0.82, respectively).

Table 3: Characteristics of the Trainees Responding to the PDCP Evaluation

Demographic Factor	Pre-Intervention, (*n* =31) *n* (%)	Post-Intervention, (*n* = 30) *n* (%)	*P*-value[a]
Trainee status			
Intern	18 (58.1)	13 (43.3)	0.25
Fellow	13 (41.9)	17 (56.7)	
Cohort year			
Year 1	23 (74.2)	23 (76.7)	0.82
Year 2	8 (25.8)	7 (23.3)	
Gender			
Male	7 (22.6)	10 (33.3)	0.35
Female	24 (77.4)	20 (66.7)	
Race			
Non-White	5 (16.1)	8 (26.7)	0.32
White	26 (83.9)	22 (73.3)	
Ethnicity			
Hispanic/Latino	4 (12.9)	4 (13.3)	0.96
Non-Hispanic/Latino	27 (87.1)	26 (86.7)	

Note:

[a] *P*-values are based on x^2 tests; results show comparability of demographic characteristics between pre- and post-interventions.

Table 4 demonstrates the change in primary and secondary outcome measures from pre- to post-intervention. There was a significant increase in the median PFI score (3.4 to 3.6 Cohen's d = 0.33, $p = 0.03$). Other outcome measures also increased over time but did not reach statistical significance. Trainees' ability to set goals for themselves improved by 38.4% after the intervention ($p = 0.001$). 51.6% of trainees set weekly goals for themselves prior to participating in the coaching program, whereas 90% were setting weekly goals after the intervention.

Table 4: Pre- and Post-Intervention Primary and Secondary Outcome Measures

Index (n = 22)[a]	Pre-Intervention	Post-Intervention	P-value[b]	Cohen's d
	Mean (SD)	Mean (SD)		
Gratitude score	11.5 (2.2)	12.1 (1.6)	0.11	0.31
Hardiness-Resiliency score	33.7 (3.6)	34.5 (3.7)	0.07	0.22
Measurement of Current Status	11.0 (1.8)	11.6 (2.1)	0.10	0.30
PERMA score	59.0 (7.5)	60.3 (6.9)	0.14	0.18
Self-Valuation score	7.8 (3.9)	8.6 (3.7)	0.15	0.22
Intolerance of Uncertainty	Median = 27.0	Median = 26.0	0.33	0.15
Professional Fulfillment	Median = 3.4	Median = 3.6	0.03	0.33

Note:

[a] Respondents without both pre-intervention and post-intervention survey responses were removed from the analysis. May include missing data.

[b] The first five p-values are based on paired t-tests. The last two p-values are based on Wilcoxon signed-rank tests.

Table 5: Correlation of Item and Index Scores

Index[a]	n	Correlation Coefficient[b]	P-value
Correlation between burnout score and selected item scores			
Professional Fulfillment	28	–0.65	< 0.001
Self-Valuation (self-compassion) score	29	–0.75	< 0.001
Correlations between number of meetings with coach and index scores			
Gratitude score	30	0.04	0.85
Hardiness-Resiliency score	28	–0.08	0.68
Measurement of Current Status	30	0.14	0.47
Intolerance of Uncertainty	29	–0.13	0.50
PERMA score	28	0.23	0.24
Professional Fulfillment index	28	–0.04	0.84
Self-Valuation (self-compassion) score	29	0.13	0.51
Correlations between Measure of Current Status (MOCS) score and remaining index scores			
Gratitude score	30	0.49	0.01
Hardiness-Resiliency score	28	0.28	0.15
Intolerance of Uncertainty	29	–0.46	0.01
PERMA score	28	0.61	0.001
Professional Fulfillment index	28	0.18	0.37
Self-Valuation (self-compassion) score	29	0.46	0.01

Note:

[a] The data source for this table is post-intervention survey data.

[b] The correlation coefficients for Gratitude score are Spearman's rank correlation coefficients, while the rest are pairwise correlation coefficients.

Table 5 presents the results of the bivariate analysis to explore correlations between various outcome measures based on end of program data. Negative correlations were shown between Burnout and both Professional Fulfillment (r = -0.65, $p < 0.001$) and Self-Valuation (r = -0.75, $p < 0.001$). Positive correlations were shown between the MOCS and three other outcomes: the Gratitude score (r = 0.49, $p = 0.01$), the PERMA score (r = 0.61, $p = 0.001$), and Self-valuation (r = 0.46, $p = 0.01$). Further, a negative correlation was shown between the MOCS and IUS (r = -0.46, $p = 0.01$). There were no significant associations between the number of meetings with the coach and the seven item and index scores.

Examining the impact on multiple outcomes using multivariate regression (**Table 6, next page**), our study findings indicate that the Measure of Current Status significantly predicts Gratitude (β = 0.57, $p < 0.001$), Intolerance of Uncertainty (β = –2.08, $p = 0.02$), PERMA (β = 1.90, $p < 0.001$), and Self-Valuation (β = 0.75, $p < 0.01$).

DISCUSSION

We implemented a longitudinal professional development coaching program for pediatric interns and fellows grounded in positive psychology. Our findings show that this program was associated with a statistically significant improvement in trainee professional fulfillment as measured by the PFI. Through reflective listening and goal setting, coaching may help trainees manage stress by developing effective coping mechanisms and increasing positive emotions [5].

The PFI measures both burnout and professional fulfillment, providing a more complete picture of well-being, and has been shown to accurately assess changes that occur across time in relation to interventions [12]. Currently, there are no established thresholds regarding clinically meaningful changes in PFI scores. Therefore, we used Cohen's d to guide the reader in understanding the difference between PFI scores. We found a small to moderate improvement in trainees' PFI scores, though the impact on each individual trainee may be quite variable. Importantly, the trainees were surveyed at the beginning and end of the same academic year, so the results do not capture trainee wellness in subsequent academic years. The PFI has been used in several studies of practicing physicians at all levels and measures professional fulfillment, burnout, and interpersonal disengagement. These are characteristics that are not thought to change due to comfort or progression in training. While this study design cannot determine causality, a randomized controlled trial evaluating female surgical residents who participated in a virtual professional development coaching program [21] showed a similar statistically significant increase in PFI compared to our cohort. The virtual coaching program used the same positive psychology curriculum (delivered via Zoom or Facetime rather than in person meetings), coaches underwent the same training with the same subject matter expert leading the training, had the same number of sessions, and used the same assessment tools that we used in our study.

Table 6: Multivariate Regression Models with Selected Index Scores and Items

	Variables[a,b]	Coefficient	*P*-value
Measure of Current Status score[c]	Gratitude score	0.57	0.001
	Hardiness-Resiliency score	0.54	0.06
	Intolerance of Uncertainty	–2.08	0.02
	PERMA score	1.90	0.001
	Professional Fulfillment index	0.04	0.40
	Self-Valuation score	0.75	0.01
Number of meetings with coach[c]	Administrative burdens	0.24	0.02
	Self-confidence	0.01	0.95
PERMA score[c]	Recommend residency/training	0.03	0.01
	Goal setting	0.01	0.19
	Opportunity to reflect	0.02	0.28

Note:

[a] The data source for this table is post-intervention survey data.

[b] The dependent variables are either continuous variables (the first six items in the column) or dichotomized ordinal variables (the remaining five items in the column).

[c] The independent variable for each multivariate regression is a continuous variable.

Interestingly, the bivariate analysis of our study population showed that trainees who participated in the coaching program did not show a deterioration in other measures of well-being. This suggests that maintenance of well-being may be just as critical and perhaps more realistic than actual improvement.

A secondary aim was to determine drivers and indices of well-being that educators could use to guide curriculum development. We recognize that not everyone will want or be able to implement a positive psychology coaching program. Therefore, if we can identify specific drivers of trainee well-being, educators could target these indices with future well-being endeavors. Drivers of well-being, whether they are innate or acquired, are prone to change with life experiences or professional development. For example, we found that coping (MOCS) was positively correlated with gratitude, PERMA, and self-valuation; and negatively correlated with intolerance of uncertainty. Our results also indicated a negative correlation between burnout and self-valuation. While physicians notoriously focus on mistakes and poor outcomes, self-valuation focuses on the growth mindset approach to mistakes and encourages individuals to see errors and poor outcomes as learning experiences and an opportunity to improve. This is a central tenant of our coaching program and an important focus for future well-being initiatives. The positive correlation between MOCS and other outcome measures suggests that curricula aimed at improving professional fulfillment and trainees' ability to cope in stressful situations, while focusing on positive experiences using a growth mindset approach may improve well-being even outside of a positive psychology coaching program.

The PDCP has thrived in the Department of Pediatrics and requires minimal resources. Coaches volunteer their time, and the administration burden is minimal as this program is partnered with the established internal medicine coaching initiative. Currently, the pediatric PDCP is entering its 6th year and 72 pediatric trainees are currently being coached by 37 pediatric faculty. New coaches are recruited each year as some inevitably leave the program. When we first implemented the PDCP in the Department of Pediatrics our resources were limited, and we had yet to show a proof of concept. Therefore, this study included only the pediatric interns and subspecialty fellows. Currently, pediatric residents are also eligible to participate. Although all trainees had vastly different clinical experiences, we felt comfortable aggregating the data as we were not comparing scores between trainees, but rather to their own score before and after the intervention. Furthermore, we examined differences between interns and fellows and by cohort year and found no statistical differences. The inclusion of fellows in our study population allowed us to draw conclusions at various stages of training.

A limitation of the study is the size of our cohort and lack of a control group. Due to the paucity of available well-being curricula, we did not feel it was ethical to introduce the program to only half the trainees. Future studies would benefit from a multi-institutional cohort with a randomized control group. The nature of this study does not allow us to determine causality. However, a similar study [21] which included a control group showed a deterioration in HRS and IUS of those in the control arm, whereas our cohort showed stability in these categories. Taken together, evaluation of our cohort in the absence of a control group would not have revealed how coaching may buffer trainees against an erosion of positive skills or attributes in certain domains of well-being. This suggests the goal of well-being initiatives may not be to improve trainee's well-being in each category but may be to prevent deterioration. We also found that despite a non-significant increase in the trainees' level of burnout, the PFI increased significantly. This finding shows that our positive psychology coaching program may support improved professional fulfillment despite an apparent increase in burnout, reinforcing the concept that well-being is not merely the absence of burnout.

Paired survey data was available for 33% of the trainees that participated in the coaching program. The response rate indicates that we may have selected for trainees who had a more positive experience with the coaching program or those who

were less burned out and may have therefore been more available to complete the survey. Future studies with more participants and a control group will be useful. We were not able to compare the effectiveness of individual coaches to determine if various strategies used (outside of the curriculum) or specific communicative skills may have impacted the results. This could be addressed in future studies.

While time and resources are common limitations to implementing well-being programs, our results did not find a correlation between number of meetings between the coach and the trainee and improvement in well-being outcome measures. However, a similar study [21] showed an incremental increase in PFI for each additional coaching meeting. Of note, 34% of trainees in our cohort only met once with their coach, and we still showed a statistically significant improvement in our primary outcome. Therefore, some involvement in well-being initiatives, even in the absence of full participation, may have a positive impact. The exact amount of engagement necessary is unknown, however, a possible mechanism in which these meetings led to a positive change may have been an increased ability to set goals given the significant improvement seen in our cohort.

CONCLUSION

As mandated by the ACGME, all training programs are required to assess and address trainee well-being. We showed that a professional development coaching program was associated with a statistically significant increase in pediatric interns and fellows' well-being as measured by the PFI. While we recognize that not all programs will have the desire or capability to implement a longitudinal coaching program, our findings could serve as a roadmap for educators by identifying drivers of trainee well-being. To fully address the ACGME requirements, educators should think beyond measuring burnout and focus on trainee well-being.

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Appendix A

1. Internally developed work experience assessment: Thinking about the past year, please rate your experiences with...

	Excellent	Good	Fair	Poor
Patient care				
Operative activities				
Understanding your role in the patient care team				
The opportunity to learn new skills				
Recognition for your work				
Receiving feedback about your skills or performance as a physician				
Your working relationship with trainees (residents or fellows)				
Opportunity to reflect on your own experiences				
Your teaching opportunities				
Your relationship with nurses				
Your relationship with other residents				
Your working relationship with faculty colleagues				

2. Professional Fulfillment Index: Trockel, M., Bohman, B., Lesure, E. *et al.* A Brief Instrument to Assess Both Burnout and Professional Fulfillment in Physicians: Reliability and Validity, Including Correlation with Self-Reported Medical Errors, in a Sample of Resident and Practicing Physicians. *Acad Psychiatry* **42,** 11–24 (2018). https://doi.org/10.1007/s40596-017-0849-3.

3. Self-valuation Scale: Trockel MT, Hamidi MS, Menon NK, Rowe SG, Dudley JC, Stewart MT, Geisler CZ, Bohman BD, Shanafelt TD. Self-valuation: Attending to the Most Important Instrument in the Practice of Medicine. Mayo Clin Proc. 2019 Oct;94(10):2022-2031. doi: 10.1016/j.mayocp.2019.04.040. Epub 2019 Sep 19. PMID: 31543254.

4. Gratitude Questionnaire: Questions 2 and 6. McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. Journal of Personality and Social Psychology, 82, 112-127.

5. Measurement of Current Status: Questions 11-13. Antoni, M. H., Lechner, S. C., Kazi, A., Wimberly, S. R., Sifre, T., Urcuyo, K. R., Phillips, K., Gluck, S., & Carver, C. S. (2006). How stress management improves quality of life after treatment for breast cancer. Journal of Consulting and Clinical Psychology, 74, 1143-1152. Can be accessed here: https://local.psy.miami.edu/faculty/ccarver/sclMOCS.phtml

	0 = I cannot do this at all	1 = I can do this just a little bit	2 = I can do this a medium amount	3 = I can do this pretty well	4 = I can do this extremely well
I am confident about being able to choose the best coping responses for hard situations					
I can come up with emotionally balanced thoughts even during negative times					
I can ask people in my life for support or assistance whenever I need it					

6. PERMA Profiler - It is recommended that educators looking to evaluate PERMA in their programs should use the complete 23 item PERMA Profiler, which can be accessed here: https://www.peggykern.org/uploads/5/6/6/7/56678211/the_perma-profiler_101416.pdf

7. Intolerance of Uncertainty Short Form - Bottesi, G., Mawn, L., Nogueira-Arjona, R., Romero Sanchiz, P., Simou, M., Simos, G., … Freeston, M. H. (2020, June 10). A short-form version of the Intolerance of Uncertainty Scale: Initial development of the IUS-5. https://doi.org/10.31234/osf.io/b62wf

8. Hardiness Reslience (DRS-15) - Bartone, P. T., Ursano, R. J., Wright, K. M., & Ingraham, L. H. (1989). The impact of a military air disaster on the health of assistance workers. Journal of nervous and mental disease, 177(6), 317-328.

9. Internally Developed Questions:

- How often do you set goals in typical program meetings (mentors, advisors, chief residents, program director, coach)?

	I have not set goals in the past year
	Once in the past year
	Twice in the past year
	Four times in the past year
	Bi-monthly (every other month)
	Monthly
	Weekly

- How many meetings did you have with your coach this year? *NOT ASKED OF CONTROLS*

	0
	1
	2
	3
	4
	>4

- How would you rate the quality of your communication with your coach? *NOT ASKED OF CONTROLS*

	Excellent
	Good
	Fair
	Poor
	Don't know

- On average, how long are your meetings with your coach? *NOT ASKED OF CONTROLS*

	Less than 30 minutes
	30-60 minutes
	More than 60 minutes
	Don't know

- In the past year, have you used the skills you have learned in the Professional Development Coaching Program in your interaction with others? END OF YEAR ONLY, *NOT ASKED OF CONTROLS*

	Yes, I have definitely used these skills	Yes, I have somewhat used these skills	No, I have not used these skills	Not applicable
Colleagues in medicine				
Colleagues in nursing				
Relationships with family and friends				
Your mentors or advisors				
Patients				

- In previous research, the following have been noted as major challenges for trainees. For each one, please indicate if you believe the coaching program has improved your ability to cope. *NOT ASKED OF CONTROLS*

	Definitely yes	Somewhat yes	Somewhat no	Definitely no	Not sure
Information processing					
Work-life balance					
Cultural competence					
Working relationships					
Coping with work hour restrictions					
Administrative burdens					
Self-confidence					

- Given what you now know about your training experience, would you advise a qualified applicant to pursue a training here (at your training program)?

	Definitely would
	Probably would
	Probably would not
	Definitely would not

- Given what you know about the AWS Coaching Program, would you advise other training programs to implement a coaching program?

	Definitely would
	Probably would
	Probably would not
	Definitely would not

- Given what you believe are the biggest challenges for a resident, do you think the AWS Coaching Program is a useful program to address them?

	Definitely yes
	Somewhat yes
	Somewhat no
	Definitely no
	Not sure

- The coaching model used in this program was previously only used for in-person meetings in an organization where coach and coachee were both employed. Which comes closest to your opinion about your experience of coaching?

	I prefer coaching with a coach/coachee outside my organization
	I would prefer to participate in this program inside my organization
	I have no preference

- Are you Hispanic or Latino origin or descent?

	Yes, Hispanic or Latino
	No, not Hispanic or Latino

- What is your race?

	White
	Black or African American
	Asian
	Native Hawaiian or Other Pacific Islander
	American Indian or Alaska Native
	More than one race