

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Ensuring stability in surgical training program leadership: a survey of program directors

Farhana Shariff ¹ MDCM MSc(HPE) FRCSC; Frances C Wright ^{1,2} MD Med FRCSC; Najma Ahmed ^{1,3} MD PhD FRCSC; Fahima Dossa¹ MD; Ashlie Nadler ^{1,2} MD MPH FRCSC; Julie Hallet ^{1,2} MD MSc FRCSC

1. Department of Surgery, University of Toronto, Toronto, ON, Canada
2. Division of General Surgery, Sunnybrook Health Sciences Centre, Toronto, ON, Canada
3. Division of General Surgery, St. Michael's Hospital, Unity Health Toronto, Toronto, ON, Canada

Corresponding authors:

Dr. Julie Hallet, Dr. Farhana Shariff

2075 Bayview, T2-102, Toronto, ON, M4N 3M5

T. 416-480-4774; F. 416-480-6002;

E. Julie.hallet@sunnybrook.ca

E. farhana.shariff@mail.mcgill.ca

Disclosures: JH has previously received speaking honoraria from Ipsen Biopharmaceuticals Canada, Novartis Oncology, and Advanced Accelerator Applications.

FCW has previously received speaking honoraria from Merck and Novartis (donated to University of Toronto)

There are no sources of funding to disclose for this project.

ABSTRACT

Introduction

Surgical program directors (PD) play an integral role in postgraduate trainee wellbeing and success. While studies in medical specialties have documented factors contributing to PD burnout, early attrition rates and contributory factors in surgical PDs have not yet been described. This study examined PD satisfaction, stressors in the role, and areas institutions could target to improve PD support

Methods

A cross-sectional survey of accredited surgical subspecialty PDs was administered nationally. Domains assessed included PD demographics and compensation, availability of administrative support, satisfaction with the PD role, and factors contributing to PD challenges and burnout.

Results

Sixty percent of eligible surgical program directors (81/134) from 12 surgical specialties responded to the survey. Significant heterogeneity was seen in PD tenure, compensation models, and available administrative support. All respondents reported exceeding their weekly protected time for the PD position, and 66% received less than 0.8FTE of administrative support. One-third of respondents were satisfied with overall compensation, while 43% were unhappy with compensatory models.

The majority of respondents (70%) enjoy multiple aspects of the PD role, including relationships with trainees and shaping the education of future surgeons. Significant stressors included insufficient administrative support, complexities in resident remediation, and inadequate compensation, contributing to 37% of PDs having considered leaving the post prematurely.

Interpretation

The majority of surgical PDs enjoyed the role. However, intersecting factors such as disproportionate time demands, lack of administrative support and inadequate compensation for the role contributed to significant stress and risk of early attrition.

Confidential

INTRODUCTION

Surgical program directors (PDs) face administrative demands from internal (faculty/supporting institution) and external (i.e., Royal College of Physicians and Surgeons of Canada - RCPSC) sources. Additionally, PDs are responsible for dynamic resident support, serving as career counsellors, and safeguarding the educational and emotional needs of trainees while balancing busy clinical practices, and ensuring clinical services are staffed to maximize both trainee learning and patient care (1-3).

PDs have been identified as being at increased risk for emotional exhaustion and burnout (4, 5). Consequent turnover can affect faculty, trainees, and the quality of residency programs (6, 7). Studies in Internal Medicine and Radiation Oncology have found that factors associated with burnout and early attrition include administrative burden, available supportive resources, management of residents facing remediation, remuneration, and limited opportunities for promotion (4-6, 8, 9). Surgical training programs are uniquely complex, requiring achievement of medical competencies in addition to complex technical skills, and intraoperative judgement. Acknowledging the multifaceted nature of training, whether the above factors or others contribute to PD attrition in procedural-based specialties is still unknown.

This study aims to examine satisfaction of surgical PDs, prominent stressors, and factors contributing to early attrition from the position, with a view to standardize program structure, management, and support.

METHODS

Study Design and Population

We conducted a web-based self-administered cross-sectional survey of Canadian surgical PDs from RCPSC-accredited post-graduate programs, identified through the RCPSC website. We identified a final eligible population of 134 PDs from Cardiac Surgery, Colorectal Surgery, General Surgery, Neurosurgery, Orthopedic Surgery, Otolaryngology, Pediatric Surgery, Plastic Surgery, Surgical Oncology, Thoracic Surgery, Urology, and Vascular Surgery. REB approval was obtained through Sunnybrook Health Sciences Centre.

Survey Development

We followed recommendations for survey development and reporting (Appendix 1) (10, 11). Select experts (surgeons, PDs, medical educators) identified important domains and subdomains related to PD experience, stressors, and compensation. Survey items were generated first without restriction, and later reduced to include only the most relevant items (12).

We assessed five major domains: demographic characteristics, compensation, administrative support, satisfaction, and challenges and factors contributing to burnout. We used a combination of 5-point Likert/interval scale questions and open-ended questions facilitating expression of opinions not covered in the survey (13). Open-ended questions prompted participants to comment on the “best” and “worst” parts of the position, as well as provide suggestions for how the experience might be improved.

Survey Testing

The survey was tested via 3 steps to ensure face validity, content validity, clarity, and feasibility of administration. First, the survey was piloted electronically with a group of 5 surgical PDs, who were asked to comment on clarity, flow, and difficulties with administration. Test-retest reliability was next confirmed by asking the pilot group to re-complete the survey within 1

1
2
3 month; answers were compared to ensure consistency. Third, clinical sensibility analysis was
4 performed throughout the process by the expert group using a standardized tool to ensure face
5 validity, clarity, and comprehensiveness (12). We used a translation-re-translation approach to
6 translate the original validated English survey into French. We assessed test-retest reliability
7 using weighted Cohen's Kappa coefficients. More than 80% of kappa scores were >0.4
8 indicating moderate to good agreement for most components of the survey (14).
9
10
11
12
13
14
15

16 *Survey Administration*

17 The survey was administered online using *SurveyMonkey* (Survey Monkey Inc., San Mateo,
18 California, USA) from December 2019 to January 2020. Eligible participants were contacted by
19 email in both English and French and provided with a single-use survey web-link as well as
20 information regarding privacy, data storage, informed consent process and study purpose.
21 Email reminders were sent after 1, 2 and 4 weeks. Participation was voluntary and anonymous.
22 There were no incentives offered. Respondents' names and e-mail addresses were not linked to
23 survey responses. In compliance with the American Association of Public Opinion Research,
24 surveys were considered completed when more than 80% of questions were answered (10).
25
26
27
28
29
30
31
32
33

34 *Data Analysis*

35 Quantitative responses were summarized and are reported as frequencies and proportions.
36 Likert responses were collapsed into 3 categories (agree/strongly agree, neutral,
37 disagree/strongly disagree). For comparisons, programs were stratified into 3 groups based on
38 program size (small program = 1-10 residents, mid-size program = 11-20 residents, large
39 program >20 residents). Likert response distributions were compared across groups using the
40 Kruskal-Wallis test. Where results were statistically significant, we performed post-hoc pairwise
41 comparisons using the Wilcoxon rank sum test. To reduce the likelihood of type 1 error, a
42 limited number of statistical comparisons were performed; decisions for these comparisons
43 were driven by clinical relevance. Quantitative analyses were performed using R version 3.3.
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Narrative responses were analyzed using an open coding strategy for qualitative research to
4 ensure valuable additional information provided by participants was captured, and to ensure
5 issues not covered comprehensively in the survey were identified (15, 16). Narrative comments
6 were assigned codes, which were grouped into relevant categories/themes in sequential
7 analyses.
8
9
10
11
12
13

14 *Reflexivity*

15 While most team members are subspecialty general surgeons, there is wide variability in formal
16 educational training and experience with surgical program leadership. FCW and NA have
17 served as fellowship and residency PDs. FS - a surgical fellow, and FD – a surgical resident
18 provided the trainee perspective. JH is a surgical oncologist with expertise in survey
19 methodology. Regular crosschecking between team members allowed for discussion and for
20 potential biases to be unveiled.
21
22
23
24
25
26
27
28
29

30 **RESULTS**

31 *Participant Characteristics*

32 Eight-one of 134 (60%) eligible PDs participated. Two respondents partially completed surveys.
33 Five PDs were excluded due to inability to be contacted via email or transition out of the PD
34 role during the study's course.
35
36
37
38
39
40
41
42

43 Twenty out of 22 eligible female PDs and 59 out of 112 eligible male PDs participated. Response
44 rates by program were: Cardiac Surgery 54% (7/13), Colorectal Surgery 40% (2/5), General
45 Surgery 75% (12/16), Neurosurgery 86% (12/14), Orthopedic Surgery 47% (8/17),
46 Otolaryngology/Head and Neck Surgery (OHNS) 64% (9/14), Pediatric Surgery 12.5% (1/8),
47 Plastic Surgery 82% (9/11), Surgical Oncology 80% (4/5), Thoracic Surgery 50% (4/8), Urology
48 67% (8/12), Vascular Surgery 36% (4/11). Respondent characteristics are detailed in [Table 1](#).
49 46% of participants were in practice for 5-10 years prior to becoming a PD. The majority (68%)
50 did not have training in education prior to becoming PD.
51
52
53
54
55
56
57
58
59
60

Position Characteristics

Variability existed in expected PD tenure across programs. Option to renew the position after each term ranged from 1 or 2 renewals (31% and 20%), to “no maximum” (32%), with the latter more common in subspecialty programs such as Colorectal Surgery, General Surgical Oncology, and Thoracic Surgery. Eighty six percent (70/81) listed the *total* expected term, including renewals, as 10 years or more. Additional program characteristics are summarized in [Table 2](#).

Program Director Responsibilities and Resources

Protected time for the role varied by program size. PDs of small and mid-size programs frequently reported having less than one hour of protected time per week (n = 22, 54%; n = 10, 42%; respectively); this was less frequently seen among PDs of large programs (n = 1, 7%) ([Table 3](#)).

The amount of time spent on the PD role was often discordant with the amount of protected time. While only 7% (n = 3) from small programs reported >5hrs/week of protected time, 56% (n = 23) reported spending >5hrs on the role. Similarly, while only 8% (n = 2) of PDs from mid-size programs reported >5hrs/week of protected time, 71% (n = 17) reported spending >5hrs/week on the role ([Table 3](#)).

Half of participants (52%, n = 41) reported spending more than half of their PD time on tasks related to program administration. Across all program sizes, PDs spent similar amounts of time on resident support, promotions and remediation, and curricular planning.

Administrative support available in Full Time Equivalents (1 FTE = 37.5hr/week) ranged by program size. Of note, 73% of programs received <1 FTE of administrative support weekly, although 80% (n = 12) of large programs received ≥ 1 FTE weekly. Sixty percent (n = 48) of PDs stated they did not have access to additional administrative support during times of increased

1
2
3 need (e.g. interviews, accreditation, remediation). Among those with access to additional
4 support (n = 29, 36%), 31% (n = 9) found the amount of support to be insufficient.
5
6
7

8 9 *Funding and Compensation*

10 Funding for the PD position was provided from the university division (n=17) or department (n=
11 36) in 65% of programs. Additional sources included post-graduate medical education offices
12 and funds from international trainees. Salary ranged from \$0 to >\$100,000, with 42% (n=32)
13 receiving between \$10,000 and \$30,000. 5% (n=4) received <\$5000 annually, and an equal
14 number received no salary (Figure 1). Perceived fair salary ranged from \$20,000 to \$125,000
15 (Figure 1). Forms of non-monetary compensation are presented in Figure 2. Satisfaction with
16 compensation models varied widely, despite the large majority of PDs being satisfied with the
17 position itself (Figure 3).
18
19
20
21
22
23
24
25
26

27 *Satisfaction*

28 Seventy-seven percent (n=62) of respondents reported enjoying the position, 17% (n=14) were
29 neutral, and 2% (n=2) did not enjoy the work (Figure 3). Seventy-nine percent (n=64) of PDs felt
30 the position had increased their profile at the university, 65% (n=53) of respondents agreed
31 that the position had helped their career; 2% (n=2) felt the position had neither increased their
32 university profile nor helped their overall career trajectory.
33
34
35
36
37
38

39 Narrative comments around the most enjoyable aspects of the position centered on themes of
40 fostering resident relationships, educational influence, and personal fulfillment (Table 4).
41

42 Ninety-six percent of PDs (n=77) commented on the enjoyment and personal satisfaction
43 gained from teaching and mentoring residents, and the ability to play a role in shaping
44 tomorrow's surgeons.
45
46
47
48
49

50 *Stressors and Attrition*

51 Overall, 68% (n=55) of participants agreed the surgical PD position was more work than
52 expected and 37% (n=30) considered resigning before the end of their term.
53
54
55
56
57
58
59
60

1
2
3 Narrative comments regarding challenges with the role fell into 5 themes: administrative
4 demands, resident remediation, complexities of educational programming, faculty engagement
5 challenges, and insufficient overall compensation (Table 4). Forty percent of participants
6 (n=32) commented specifically on the challenges of navigating the management of a learner in
7 difficulty with minimal training in this skillset, and the difficult balance between dedicating
8 necessary time to a few residents in need, while still working to “devote time to program
9 improvement and skill development of the majority.”
10
11
12
13
14
15
16
17

18 **Factors associated with thoughts of resignation**

19
20 There was no association between program size ($p=0.45$), time devoted to the role, or
21 administrative support available in the program ($p=0.96$), and thoughts of resignation from the
22 position (Table 5). Of those who had considered early attrition, a slightly higher proportion had
23 <1h/week of protected time (50%) when compared to those with 1-5h/week (31.2%) and
24 >5h/week (27.3%). Dissatisfaction with compensation was associated with thoughts of early
25 resignation ($p<0.0001$). Specifically, only 18% of PDs who were satisfied/very satisfied with
26 compensation had considered resigning, compared with 66% of those dissatisfied with
27 compensatory models ($p = 0.0001$).
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

DISCUSSION

In this study, we report the first examination of stressors, compensation and satisfaction among surgical PDs and highlight areas for support. Our results demonstrate significant time demands of the position, wide variability in compensation, and insufficient administrative and institutional support.

Lack of administrative support was a key finding from this study. Accredited residency programs have to follow set rules to ensure the standardization and quality of training; however, such standards give no explicit direction regarding amounts of administrative support required. Standards of accreditation for post-graduate programs across Canada include general requirements that “the program director has appropriate support to oversee and advance the residency program” (CanRAC Standard 1.1.2) (17) without further quantification. Common Program Requirements from the Accreditation Council for Graduate Medical Education stipulate that at a minimum program coordinators “must be supported at 50% FTE (at least 20hr/wk) for administrative time (18, 19)” without addressing how this should change for larger programs. Almost one out of 4 surgical programs (24%) included in this survey lacked even this minimum 20 hours of administrative assistance. The increased workload and responsibilities associated with changes in programmatic assessment in Canada (e.g. Competency Based Medical Education), and extensive documentation required for residents undergoing remediation were mentioned as specific stressors by participants, exacerbated by a lack of compensatory increase in administrative support during times of heightened workload. Such deficiencies have been documented in transitional year residency programs (20), as well as Medicine residency programs (21), suggesting that current administrative supports for post-graduate programs fall short of what is needed, and clearer guidelines and standardization of support between programs - ideally stemming from overarching accreditation bodies - are necessary.

1
2
3 One third of the PDs in this survey considered giving up the position before the end of their
4 term. Coupling factors such as increased personal stress and time demand associated with
5 managing and supporting residents in difficulty or remediation with a lack of administrative
6 and/or faculty support; it is perhaps not surprising that despite job enjoyment and
7 opportunities for career advancement, many PDs considered leaving prematurely. To add to
8 the picture, there appeared to be no significant relationship between true vs. expected work of
9 the role and thoughts of leaving the position early, suggesting that unexpected workload is not
10 the major issue. Such early attrition and burnout in PDs is widely documented among other
11 specialties, (medicine, radiation oncology, anaesthesia) (9, 22) speaking to the highly complex
12 and challenging nature of the job. Notably, the majority of PDs in our study report having little
13 to no specialized training or support for skills acquisition in educational development or
14 leadership.
15
16
17
18
19
20
21
22
23
24
25
26

27 Acknowledging the importance of PDs in the trajectory of learner, increased turnover
28 undoubtedly carries negative implications for trainees' education (23), the university's
29 reputation, and clinical care. As a potential remedy, programmatic interventions to support
30 trainees and aid in educational planning may help to distribute workload and help reduce
31 overall PD burden. For example, a formal mentorship program trialled in Otolaryngology at the
32 University of Alberta resulted in lower resident stress scores, lower depersonalization, and
33 overall improved trainee quality of life (24), suggesting resident wellbeing can be supported in
34 ways independent of the PD. Additionally, individual academic advisors for CBME may aid PDs
35 in identifying barriers to progression in struggling learners, and may be uniquely positioned to
36 contribute to educational developments as CBME progresses (25, 26). Along a similar vein,
37 institutions should consider how they might mentor and support PDs as they move through
38 challenges in their new roles. At present such mentorship or coaching occurs in a largely ad-
39 hoc way, and formalized processes may enable PDs to better manage the complex and at times
40 competing aspects of the position.
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 A significant proportion of respondents endorsed dissatisfaction with current salary and
4 compensatory models. Interestingly, significant heterogeneity exists when it comes to funding
5 source, salary, time in practice before becoming PD, and additional forms of compensation. This
6 variability seems unrelated to both a program's resident number, and the number of trainees in
7 remediation. While it stands to reason that all programs have baseline time requirements for
8 accreditation and administration; resident scheduling, career counselling, and mentorship
9 undoubtedly require more time with increasing trainee number. Despite the passion and
10 commitment of individuals who hold these positions, absence of proportional compensation
11 contributes to a multitude of challenges, with huge implications for recruitment and retention.
12 To compensate PDs equitably, institutions should look to standardize compensation and
13 remuneration, based on standard requirements, as well as workload dependent on trainee
14 number.
15
16
17
18
19
20
21
22
23
24
25
26

27 In contrast to reports in other specialties (27), our analysis showed no difference in duration of
28 PD tenure between male and female physicians. Of note, the rate of female surgical PDs at
29 present in Canada is approximately 16%, which is comparable to recently reported rates in the
30 US (28, 29).
31
32
33
34
35

36 **Limitations**

37
38
39 There are limitations to this study that should be acknowledged. Forty percent of eligible PDs
40 did not complete the survey, with non-responders distributed across specialties. Reasons for
41 this are unknown and could be tied to satisfaction with the PD position. Additionally, given the
42 small sample size and heterogeneity of responses, multivariate analysis could not be
43 performed.
44
45
46
47
48
49
50
51

52 **Conclusions**

53
54
55
56
57
58
59
60

1
2
3 PDs of surgical specialty training programs report heterogeneity in salary, administrative
4 support, and overall compensation across sub-specialties. We identified a need for increased
5 administrative resources during times of heightened program demand, more robust
6 compensation, and increased support in counselling and mentoring trainees in difficulty.
7 Systematic culture change at the institutional level to support PDs via better-defined structural
8 processes and sufficient resources is needed to keep these educators engaged and improve
9 both PDs and trainees' experiences.
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Confidential

References

1. Willett LL, Halvorsen AJ, McDonald FS, Chaudhry SI, Arora VM. Gender differences in salary of internal medicine residency directors: a national survey. *Am J Med.* 2015;128(6):659-65.
2. Lypson M, Simpson D. It all starts and ends with the program director. *J Grad Med Educ.* 2011;3(2):261-3.
3. Kumar B, Swee ML, Suneja M. The ecology of program director leadership: power relationships and characteristics of effective program directors. *BMC Med Educ.* 2019;19(1):436.
4. West CP, Halvorsen AJ, Swenson SL, McDonald FS. Burnout and distress among internal medicine program directors: results of a national survey. *J Gen Intern Med.* 2013;28(8):1056-63.
5. Monga M, Doyle NM, Campbell D, Promecene PA, Schneider KM. Job satisfaction among program directors in obstetrics and gynecology: a national portrait. *Am J Obstet Gynecol.* 2003;189(3):628-30.
6. O'Connor AB, Halvorsen AJ, Cmar JM, Finn KM, Fletcher KE, Kearns L, et al. Internal Medicine Residency Program Director Burnout and Program Director Turnover: Results of a National Survey. *Am J Med.* 2019;132(2):252-61.
7. Fountain D, Quach C, Norton D, White S, Ratliff S, Molteg K, et al. The Perfect Storm Is on the Horizon! *J Surg Educ.* 2017;74(6):e120-e3.
8. Beasley BW, Kern DE, Kolodner K. Job turnover and its correlates among residency program directors in internal medicine: a three-year cohort study. *Acad Med.* 2001;76(11):1127-35.
9. Aggarwal S, Kusano AS, Carter JN, Gable L, Thomas CR, Jr., Chang DT. Stress and Burnout Among Residency Program Directors in United States Radiation Oncology Programs. *Int J Radiat Oncol Biol Phys.* 2015;93(4):746-53.
10. The American Association for Public Opinion Research. Standard definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys 9th edition. Deerfield, IL: AAPOR; 2016.
11. Eysenbach G. Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). *J Med Internet Res.* 2004;6(3):e34.
12. Burns KEA, Kho ME. How to assess a survey report: a guide for readers and peer reviewers. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne.* 2015;187(6):E198-E205.
13. Rea LM, Parker RA. Designing and conducting survey research : a comprehensive guide. San Francisco, CA: Jossey-Bass;; 2014. Available from: Cover image <http://catalogimages.wiley.com/images/db/jimages/9781118767030.jpg>.
14. Viera AJ, Garrett JM. Understanding interobserver agreement: the kappa statistic. *Fam Med.* 2005;37(5):360-3.
15. O'Cathain A, Thomas KJ. "Any other comments?" Open questions on questionnaires - a bane or a bonus to research? *BMC Med Res Methodol.* 2004;4:25.
16. Decorte T, Malm A, Sznitman SR, Hakkarainen P, Barratt MJ, Potter GR, et al. The challenges and benefits of analyzing feedback comments in surveys: Lessons from a cross-

- 1
- 2
- 3 national online survey of small-scale cannabis growers. *Methodological Innovations*. 2019;12(1):2059799119825606.
- 4
- 5 17. CanRAC TCRAC. *General Standards of Accreditation for Residency Programs*. Ottawa, ON: CanRAC; 2018.
- 6
- 7 18. ACGME. *Common Program Requirements (Residency)*. Accreditation Council for Graduate Medical Education 2018.
- 8
- 9 19. ACGME. *Common Program Requirements (Fellowship)*. Accreditation Council for Graduate Medical Education 2018.
- 10
- 11 20. Craig SR, Smith HL, Short MW. Results from a transitional-year program director survey: identifying crucial issues and concerns. *J Grad Med Educ*. 2012;4(1):28-33.
- 12
- 13 21. Aronica M, Williams R, Dennar PE, Hopkins RH, Jr. Benchmarks for Support and Outcomes for Internal Medicine-Pediatrics Residency Programs: A 5-Year Review. *J Grad Med Educ*. 2015;7(4):574-9.
- 14
- 15 22. De Oliveira GS, Jr., Almeida MD, Ahmad S, Fitzgerald PC, McCarthy RJ. Anesthesiology residency program director burnout. *J Clin Anesth*. 2011;23(3):176-82.
- 16
- 17 23. Appelbaum NP, Lee N, Amendola M, Dodson K, Kaplan B. Surgical Resident Burnout and Job Satisfaction: The Role of Workplace Climate and Perceived Support. *The Journal of surgical research*. 2019;234:20-5.
- 18
- 19 24. Zhang H, Isaac A, Wright ED, Alrajhi Y, Seikaly H. Formal mentorship in a surgical residency training program: a prospective interventional study. *J Otolaryngol Head Neck Surg*. 2017;46(1):13.
- 20
- 21 25. Soleas E, Dagnone D, Stockley D, Garton K, van Wylick R. Developing Academic Advisors and Competence Committees members: A community approach to developing CBME faculty leaders. *Can Med Educ J*. 2020;11(1):e46-e56.
- 22
- 23 26. Rich JV, Fostaty Young S, Donnelly C, Hall AK, Dagnone JD, Weersink K, et al. Competency-based education calls for programmatic assessment: But what does this look like in practice? *J Eval Clin Pract*. 2019.
- 24
- 25 27. Wolfsthal SD, Beasley BW, Kopelman R, Stickley W, Gabryel T, Kahn MJ, et al. Benchmarks of support in internal medicine residency training programs. *Acad Med*. 2002;77(1):50-6.
- 26
- 27 28. Carpenter AM, Tan SA, Costopoulos K, Cooper LA, Sarosi GA, Shaw CM. Gender Diversity in General Surgery Residency Leadership. *J Surg Educ*. 2018;75(6):e68-e71.
- 28
- 29 29. Filiberto AC, Le CB, Loftus TJ, Cooper LA, Shaw C, Sarosi GA, Jr., et al. Gender differences among surgical fellowship program directors. *Surgery*. 2019;166(5):735-7.
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40
- 41
- 42
- 43
- 44
- 45
- 46
- 47
- 48
- 49
- 50
- 51
- 52
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60

Tables and Figures

Table 1. Demographics of participating program directors

<i>Characteristic</i>	<i>No. (%) of respondents (n=81)</i>
Gender	
Male	59 (72.8)
Female	20 (24.7)
Prefer not to answer	2 (2.5)
Years in practice before becoming program director	
<5	14 (17.3)
5-10	28 (34.6)
11-15	10 (12.3)
16-20	4 (4.9)
>20	3 (3.7)
Educational training prior to becoming program director	
Masters of education	12 (14.8)
Education scholars program	4 (4.9)
Royal College Education Program	5 (6.2)
Other	6 (7.4)
None	55 (67.9)
More than one of the above	1 (1.2)
Program	
Cardiac surgery	7 (8.6)
Colorectal surgery	2 (2.5)
General surgery	12 (14.8)
Neurosurgery	12 (14.8)
Orthopedic surgery	8 (9.9)
Otolaryngology	9 (11.1)
Pediatric surgery	1 (1.2)
Plastic surgery	9 (11.1)
Surgical oncology	4 (4.9)
Thoracic surgery	4 (4.9)
Urology	8 (9.9)
Vascular surgery	4 (4.9)
No response	1 (1.2)

Table 2. Program characteristics

<i>Characteristic</i>	<i>No. (%) of respondents (n=81)</i>
Average intake from incoming classes (over last 3 years)	
1 resident	21 (25.9)
2 residents	23 (28.4)
3 residents	15 (18.5)
4-6 residents	14 (17.3)
7-10 residents	4 (4.9)
>10 residents	3 (3.7)
No response	1 (1.2)
Current size of program	
Small (1 to 10 residents)	41 (50.6)
Mid-size (11 to 20 residents)	24 (29.6)
Large (>20 residents)	15 (18.5)
No response	1 (1.2)
Resident option of dedicated research year	
Yes	55 (67.9)
No	24 (29.6)
No response	2 (2.5)
Number of residents currently in formal remediation	
0	60 (74.1)
1 resident	12 (14.8)
>1 resident	6 (7.4)
No response	3 (3.7)
Likelihood of program changing its number of residents in the next academic year	
Definitely will/likely to decrease	16 (19.8)
Expected to keep the same number	54 (66.7)
Definitely will/likely to increase	10 (12.3)
No response	1 (1.2)

Table 3. Program Director Responsibilities and Administrative Support Available. Results presented as frequencies and column percentages

<i>Characteristic</i>	<i>No. (%) of respondents</i>			<i>Overall (n=80)</i>
	<i>Small program (1-10 residents) (n=41)</i>	<i>Mid-size program (11-20 Residents) (n=24)</i>	<i>Large program (>20 residents) (n=15)</i>	
Hours per week devoted to program director role				
1-5hrs	17 (41.5)	6 (25.0)	2 (13.3)	25 (31.2)
6-10hrs	16 (39.0)	12 (50.0)	3 (20.0)	31 (38.8)
>10hrs	7 (17.1)	5 (20.8)	10 (66.7)	22 (27.5)
Other or no response	1 (2.4)	1 (4.2)	0 (0)	2 (2.5)
Protected academic time for program director responsibilities				
<1hr/week	22 (53.7)	10 (41.7)	1 (6.7)	33 (41.2)
1-5hr/week	14 (34.1)	11 (45.8)	7 (46.7)	32 (40.0)
>5hrs/week	3 (7.3)	2 (8.3)	7 (46.7)	12 (15.0)
Other or no response	2 (4.9)	1 (4.2)	0 (0)	3 (3.8)
Proportion of time spent on administrative duties				
0-30%	8 (19.5)	1 (4.2)	5 (33.3)	14 (17.5)
30-50%	11 (26.8)	7 (29.2)	5 (33.3)	23 (28.7)
50-70%	14 (34.1)	9 (37.5)	2 (13.3)	25 (31.2)
>70%	7 (17.1)	6 (25.0)	3 (20.0)	16 (20.0)
Other or no response	1 (2.4)	1 (4.2)	0 (0)	2 (2.5)
Duties requiring most time/effort^a				
Program administration	24 (58.5)	11 (45.8)	8 (53.3)	43 (53.8)
Resident support/counselling	15 (36.6)	9 (37.5)	6 (40.0)	30 (37.5)
Promotions and remediation	6 (14.6)	7 (29.2)	3 (20.0)	16 (20.0)
Educational/curriculum development	24 (58.5)	9 (37.5)	8 (53.3)	41 (51.2)
Other or no response	6 (14.6)	2 (8.3)	2 (13.3)	9 (11.2)
Administrative support for the program				
<0.4 FTE	16 (39.0)	1 (4.2)	1 (6.7)	18 (22.5)
0.5-0.99 FTE	22 (53.7)	16 (66.7)	2 (13.3)	40 (50.0)
≥1 FTE	2 (4.9)	6 (25.0)	12 (80.0)	20 (25.0)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Other or no response	1 (2.4)	1 (4.2)	0 (0)	2 (2.5)
Availability of additional administrative supports during periods of increased work				
Yes, sufficient	11 (26.8)	6 (25.0)	3 (20.0)	20 (25.0)
Yes, more needed	3 (7.3)	3 (12.5)	3 (20.0)	9 (11.2)
No	25 (61.0)	14 (58.3)	9 (60.0)	48 (60.0)
Other or no response	2 (4.9)	1 (4.2)	0 (0)	3 (3.8)
Source of funding for administrative support^b				
Hospital administration	10 (24.4)	4 (16.7)	1 (6.7)	15 (18.8)
Hospital/university division	9 (22.0)	10 (41.7)	4 (26.7)	23 (28.7)
Department	17 (41.5)	11 (45.8)	8 (53.3)	36 (45.0)
Other	7 (17.1)	3 (12.5)	6 (40.0)	16 (20.0)
Don't know or no response	4 (9.8)	0 (0)	0 (0)	4 (5.0)

FTE, full time equivalents
^aparticipants asked to select up to two options
^bparticipants asked to select all that apply

Confidential

Table 4. Positive features and stressors of the program director role

<i>Positive Features</i>	<i>Representative Comments</i>
Resident relationships, support, and success**	<p>“Working with residents. They are generally engaged, enthusiastic and open to challenge. Watching them gain skills and transition into capable surgeons is immensely rewarding/gratifying”</p> <p>“I love teaching, program development, making a difference, and changing their culture - ensuring that residents get proper training and are not taken advantage of”</p> <p>“{I enjoy} the ability to shape the education of the next generation of specialists”</p>
Educational Influence	<p>“{The ability to} share ideas, projects and problems with the other directors, and to actively participate in setting national goals and standards for the specialty”</p>
Personal Fulfillment	<p>“I love working with the fellows. They have great ideas and have so much energy and I feel like I am doing something positive to keep {our specialty} as a profession going which means a lot to me”</p> <p>“I take pride in seeing residents finish their program and knowing I have participated in their success”</p>
Overall Satisfaction	<p>“The residents - everything about it. The guidance, mentoring, teaching, watching them grow. Extremely rewarding and satisfying”</p> <p>“{I enjoy the} ability to improve our profession by improving resident education, and to improve our residents' lives, wellbeing and future”</p>
<i>Stressor</i>	<i>Representative Comments</i>
Resident support and remediation	<p>“Dealing with residents in difficulty makes it next to impossible to devote time to program improvement and enhancing the skill development of the majority”</p> <p>“Without administrative support all the mails and communications and are on my responsibility”</p>
Administrative demands	<p>“Accreditation documentation {leads to} time commitment and extra work that needs to be done after regular work hours, on evenings, weekends and sometimes when on vacation”</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Educational programming

“{I am} dealing with the constant pressure to add content for residents ...while balancing service and education expectations”

“At faculty level, being a "change leader" and getting colleagues to put the work into changing their teaching style, filling in CBD evaluations, etc. {is challenging}”

Faculty Engagement

“{It can be challenging to} motivate faculty to get involved in the program over and above providing clinical teaching during direct patient care”

Compensation

“In our system, with no true University promotion system or support, apart from the innate, visceral benefit one receives from being a part of exceptional, young colleagues/residents' lives, there really isn't any other significant benefit one receives. I commit between 1 to 1.5 clinical days for the position, and thoroughly enjoy it, but despite the amount I receive in salary support, I end up losing 3x as much income”

“This is one of the most difficult jobs in an academic center and is often very much underappreciated”

**Mentioned in narrative comments by 60 participants
CBD, competency by design

Confidential

Table 5. Factors associated with thoughts of resignation. Results presented as frequencies and row percentages

I have considered giving up the program director position before the end of my term

	Agree/Strongly agree (n=30)	Neutral (n=17)	Disagree/Strongly disagree (n=31)
Program director gender			
Female	5 (27.8)	5 (27.8)	8 (44.4)
Male	25 (43.1)	11 (19.0)	22 (37.9)
Years spent as program director			
<5	16 (34.8)	12 (26.1)	18 (39.1)
≥5	14 (45.2)	5 (16.1)	12 (38.7)
Program size			
Small (1 to 10 residents)	14 (36.8)	12 (31.6)	12 (31.6)
Mid-size (11 to 20 residents)	10 (40.0)	5 (20.0)	10 (40.0)
Large (>20 residents)	6 (42.9)	0 (0)	8 (57.1)
Protected academic time for program director responsibilities			
<1hr/week	17 (50.0)	7 (20.6)	10 (29.4)
1-5hrs	10 (31.2)	8 (25.0)	14 (43.8)
>5hrs	3 (27.3)	1 (9.1)	7 (63.6)
Hours per week devoted to program director role			
1-5hrs/week	8 (30.8)	7 (26.9)	11 (42.3)
6-10hrs/week	11 (35.5)	7 (22.6)	13 (41.9)
>10hrs/week	11 (52.4)	3 (14.3)	7 (33.3)
Administrative support for the program			
<0.4 FTE	6 (31.6)	5 (26.3)	8 (42.1)
0.5-0.99 FTE	16 (40.0)	8 (20.0)	16 (40.0)
≥1 FTE	8 (42.1)	4 (21.1)	7 (36.8)
Availability of additional administrative supports during periods of increased work			
Yes	10 (33.3)	4 (13.3)	16 (53.3)
No	20 (42.6)	13 (27.7)	14 (29.8)
Satisfaction with compensation			
Very/somewhat satisfied	5 (17.9)	7 (25.0)	16 (57.1)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Neutral	2 (13.3)	4 (26.7)	9 (60.0)
Very/somewhat dissatisfied	23 (65.7)	6 (17.1)	6 (17.1)
Have enjoyed role of program director			
Agree/strongly agree	19 (30.6)	12 (19.4)	31 (50.0)
Neutral	10 (71.4)	4 (28.6)	0 (0)
Disagree/strongly disagree	1 (50.0)	1 (50.0)	0 (0)
Role is more work than expected			
Agree/strongly agree	24 (43.6)	11 (20.0)	20 (36.4)
Neutral	4 (20.0)	6 (30.0)	10 (50.0)
Disagree/strongly disagree	2 (66.7)	0 (0)	1 (33.3)

FTE, full time equivalents
 Category of “no response” not shown, therefore, column totals may not sum to 100%

Confidential

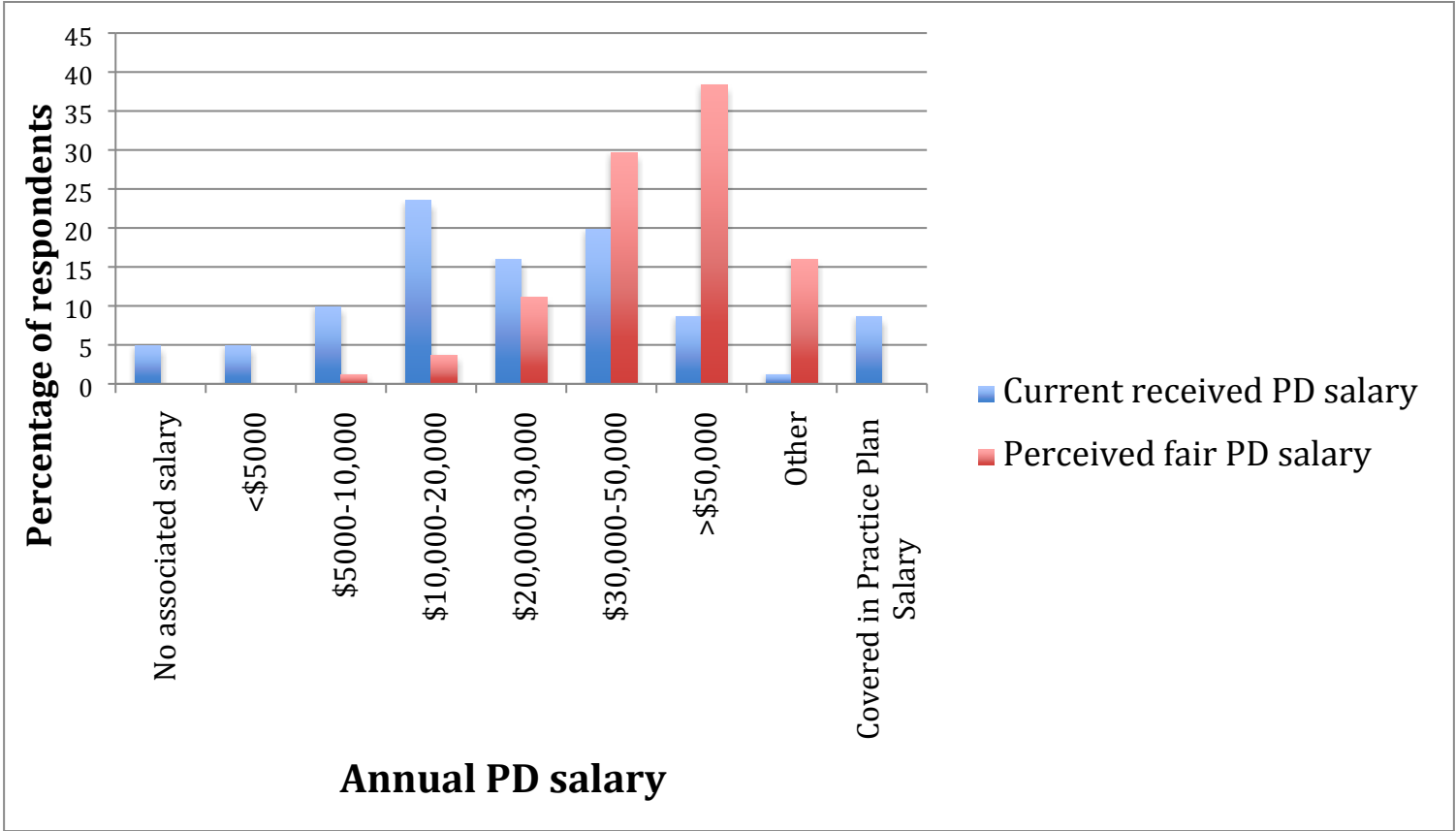


Figure 1 – Current vs. perceived fair salary for the PD position

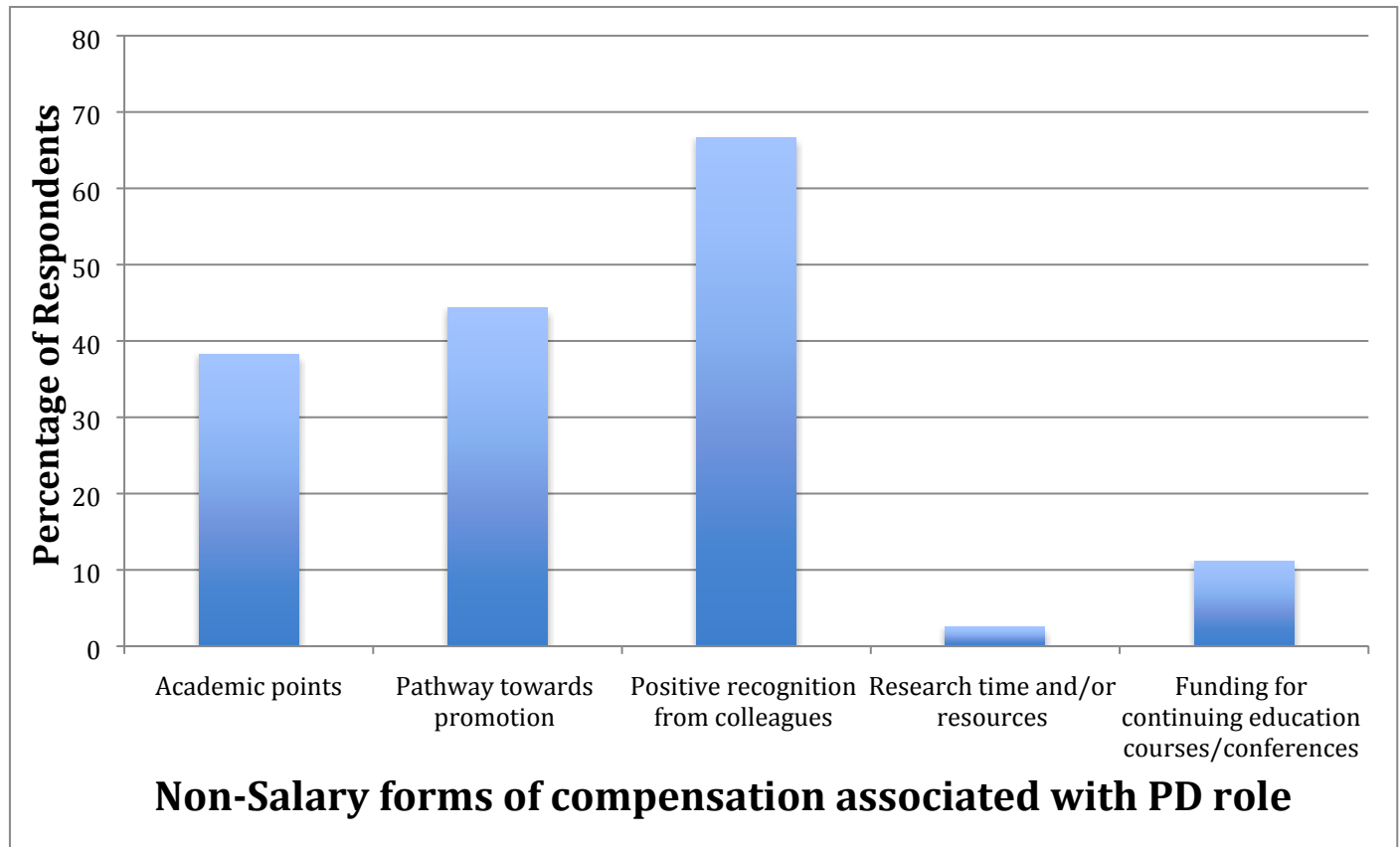


Figure 2 – Additional forms of compensation for performing the PD role

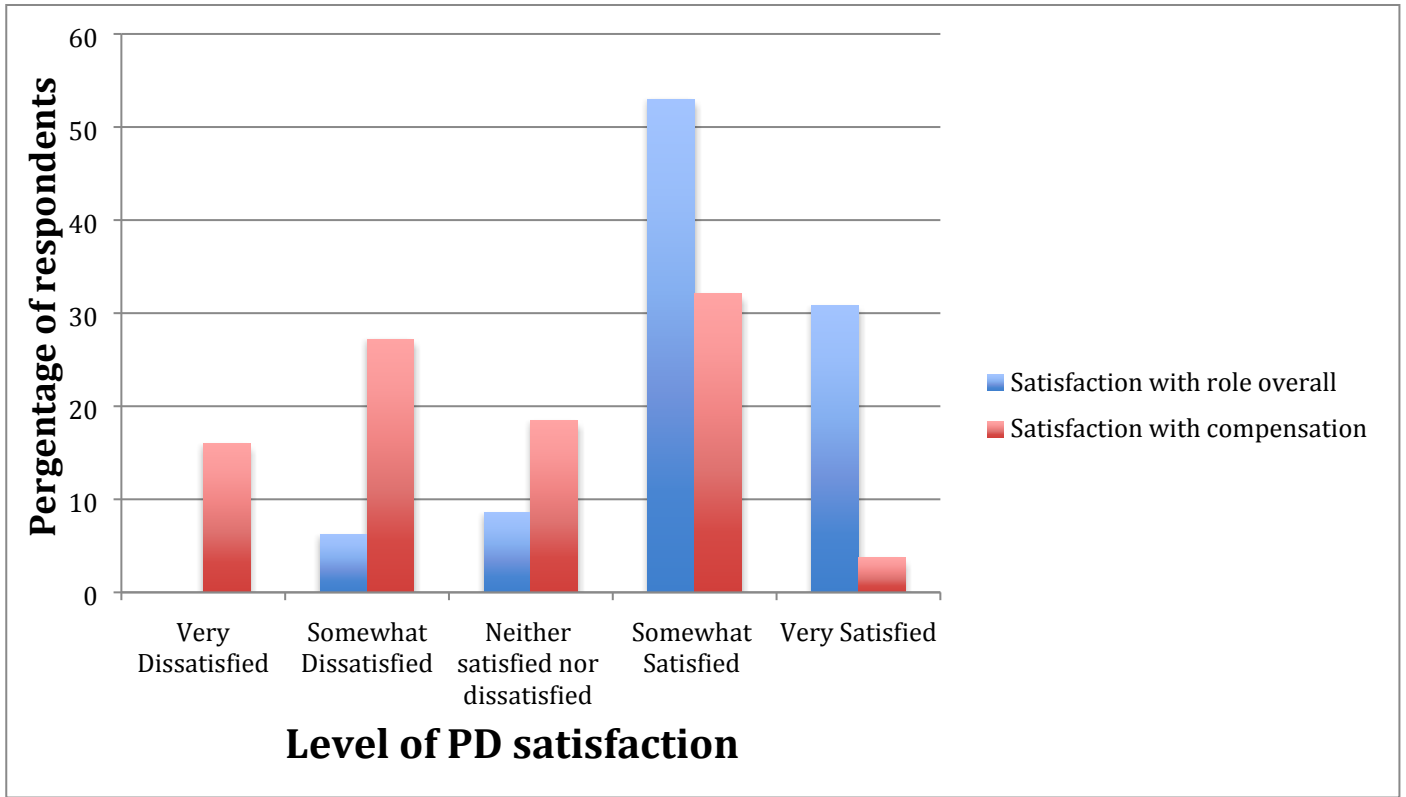


Figure 3 –Satisfaction with PD role as compared to satisfaction with PD role compensation