

Do Academic Health Care Systems Really Value Education? A Survey of Academic Plastic Surgeons

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Background: Although education is critical to the mission of academic medical centers in the United States, it is often not quantified and monetized as are their research and clinical missions. We undertook this survey to assess the perceived valuation of educational endeavors of plastic surgeon faculty at the U.S. academic medical centers.

Methods: A survey using Qualtrics software (Qualtrics, Provo, UT) was distributed to faculty members of the American Council of Academic Plastic Surgeons by electronic mail in February 2015. A total of 16 questions included both demographic information and Likert-item questions of perception of valuation of educational activities. For analysis, responses were grouped according to an adapted Net Promoter Score including “unsupportive” (0–6), “neutral” (7–8), and “supportive” (9–10).

Results: Sixty-five surveys were completed out of a total of 406, with an overall response rate of 16%. Kruskal-Wallis statistical analysis demonstrated that region and rank were not significant in perception of hospital or departmental support for educational activities. Respondents rated their departments as more supportive than their institutions ($P < 0.05$), and average perceived value rating of institutions was “unsupportive.” Financial support was associated with higher ratings with respect to support of institutions and departments. Mid-career faculty displayed a trend toward lower ratings of perception of support.

Conclusions: The majority of respondents perceived their institutions and departments as unsupportive of educational effort. Direct compensation to physicians for teaching efforts may improve faculty retention in academia and reduce physician burnout. (*Plast Reconstr Surg Glob Open* 2018;6:e1948; doi: 10.1097/GOX.0000000000001948; Published online 16 October 2018.)

INTRODUCTION

Teaching, research, and patient care are often cited as the cornerstones of academic medicine, with teaching being the most influential aspect attracting physicians to

pursue careers in academia.^{1,2} Despite the increase in physicians in the United States over the last decade, the number of physicians entering academic medicine remains relatively unchanged and comprises a diminishing part of the work force.³ Academic physicians face increasing pressure to focus on scholarly and clinical productivity rather than educating medical trainees.⁴ Studies showing discontent with the relative value unit system highlight that many physicians believe teaching time is not properly valued or compensated.^{5–8}

In surgical specialties, teaching and mentorship strongly influence the career trajectories of medical students and residents.^{9–11} Valsangkar et al.¹² found that plastic surgeons comprise only 10% of all active academic surgeons, but are just as productive as their colleagues. Despite involvement of plastic surgeons in the educational enterprises at Academic Health Centers, there has not been a study of plastic surgery-specific perceptions of the value of education in their current environments in the United States.

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From 2015 to 2016, plastic surgery–integrated residencies were one of the fastest growing graduate medical programs, and graduates of these programs were more likely to pursue careers in academia than those from independent plastic surgery training programs.^{13,14} The perspectives of plastic surgeons are unique and relevant because plastic surgery departments and divisions tend to be small but have categorical residencies that proportionately send more graduates into academic careers, and may incur considerable costs through teaching in the operating room.

The aim of this study was to assess the perceived value that Academic Health Centers place on teaching within the context of U.S. plastic surgery residency programs. We hypothesized that plastic surgeons perceive support for education in their academic institution and departments as unsupportive. To measure this perceived value, we analyzed responses from a nationwide survey of plastic surgery faculty members of the American Council of Academic Plastic Surgeons (ACAPS).

METHODS

A survey-based study of ACAPS members was designed to assess perceptions of the relative value of teaching at their institution and within their department. A 16-question self-administered survey was designed to collect data on responders' academic profile and perception of their hospital/institution's and division/department's valuation of educational activities using Qualtrics Software (Qualtrics, Provo, Utah). Valuation questions were rated on an 11-point Likert scale (range, 0–10), and additional information was gathered using multiple choice answers, numerical inputs, continuous rating scales, and free text responses. The survey was reviewed by 2 independent reviewers to establish face validity. A compilation of the survey questions is available as **Supplemental Digital Content 1** (see survey, **Supplemental Digital Content 1**, which displays the original survey instrument sent to ACAPS members via e-mail using Qualtrics Software (Qualtrics), <http://links.lww.com/PRSGO/A875>).

The anonymous and voluntary survey was distributed to all ACAPS members on record via e-mail in February 2015, with reminder e-mails sent throughout the month. Seven questions provided demographic information including academic rank and geographic location. Academic rank options were Full Professor, Associate Professor, Assistant Professor, or Instructor. Respondents were asked if they were on a tenure track or already had tenure. Respondents were also asked what, if any, nontenure tracks were available for promotion at their institution (clinical service, research, education, clinical educator, or other). Respondents were also asked if they engaged in regular contact medical students, residents, and fellows on a weekly basis.

Participants were not asked to indicate their specific affiliated institution for anonymity, but were asked to identify their geographic region as the Midwest, Southeast, Northeast, Southwest, and West. Faculty perceptually assessed how much their institution and department/division

valued their educational effort with respect to teaching medical students, residents, and fellows on a Likert scale of 0–10 (with 10 being highly valued). Participants were also provided free text space for comments to elaborate on their responses. Valuation was analyzed quantitatively comparing institution and department valuation using the Pearson's chi-squared test and the Kruskal-Wallis rank sum test in RStudio (RStudio Team, Boston, Mass.), both with statistical significance defined as a 2-tailed $P < 0.05$. Free text comments were reviewed for common themes.

Responses to valuation questions were operationally categorized with the Net Promoter Score (NPS), a tool created by Reichheld¹⁵ designed to assess customer satisfaction with a product or company that subdivides responses based on their response to a 0–10 rating scale: those answering 0–6 are termed “detractors,” 7–8 feel “passive,” and 9–10 are “promoters.” We operationally defined responses falling within these categories as perceiving the institution or department to be “unsupportive” (rating 0–6), “neutral” (7–8), or “supportive” (9–10) of educational activities.

This study was deemed exempt by the institutional review board.

RESULTS

Out of the 406 ACAPS faculty members on record at the time of survey distribution, 65 surveys were completed for an overall response rate of 16%. Table 1 summarizes the demographic distribution of respondents. Of the respondents, 26 (40.0%) identified as being on the Education or Clinician Educator track and 14 (21.5%) as being on a traditional Tenure track. The majority of respondents reported weekly contact with students (87.9%), residents (96.9%), and fellows (61.5%). In the following sections, “institution” refers to the respondent's affiliated hospital or institution, while “department” refers to the specific division or department within the institution.

As a whole, respondents rated their own department as more supportive than their institution ($P < 0.05$). The average perceived value rating given by all respondents was unsupportive for their home institution (mean 4.89/10, median and mode 5), and unsupportive for their affiliated department (mean 5.95/10, median 7, mode 8). The perceived institutional support for education by Education track respondents was unsupportive for their home institution (mean 5.71/10, median 6 and mode 8) and neutral for their affiliated department (mean 7.36/10, median 8, and mode 10). In comparison, perceived support for education by Tenure track respondents was unsupportive for both institution (mean 5.14/10, median 5.5 and mode 7) and department (mean 6.07/10, median 5.5, and mode 8).

Influence of Region

All regions gave higher average department ratings as compared with institutional ratings. By region, the average institution rating ranged from a low of 3.50/10 in the West to a high of 5.67/10 in the Southeast, and the average department rating ranged from a low of 4.83/10 in

Table 1. Faculty Perceptions of Institutional and Departmental Support for their Educational Efforts Based on Geographic Region and Faculty Rank

	Perception of Institution Support; No. Responses (% of Total)			<i>P</i>	Perception of Department Support; No. Responses (% of Total)			<i>P</i>
	Unsupportive	Neutral	Supportive		Unsupportive	Neutral	Supportive	
Region				0.155				0.316
Midwest (n = 31)	22 (71.0)	9 (29.0)	0 (0.0)		18 (58.1)	11 (35.5)	2 (6.5)	
Northeast (n = 12)	9 (75.0)	1 (8.3)	2 (16.7)		5 (41.7)	6 (50.0)	1 (8.3)	
Southwest (n = 12)	5 (41.7)	7 (58.3)	0 (0.0)		3 (25.0)	8 (66.7)	1 (8.3)	
Southeast (n = 4)	2 (50.0)	2 (50.0)	0 (0.0)		2 (50.0)	0 (0.0)	2 (50.0)	
West (n = 6)	6 (100.0)	0 (0.0)	0 (0.0)		4 (66.7)	2 (33.3)	0 (0.0)	
Rank				0.444				0.202
Full professor (n = 35)	23 (65.7)	11 (31.4)	1 (2.9)		16 (45.7)	14 (40.0)	5 (14.3)	
Associate professor (n = 15)	10 (66.7)	4 (26.7)	1 (6.7)		9 (60.0)	5 (33.3)	1 (6.7)	
Assistant professor (n = 15)	11 (73.3)	4 (26.7)	0 (0.0)		7 (46.7)	8 (53.3)	0 (0.0)	

the West to 6.83/10 in the Southeast, with all being unsupportive (score < 7). A Pearson's chi-square analysis showed a statistically significant correlation between institution and department ratings ($P < 0.05$, correlation coefficient = 0.576), with the highest correlation in the Midwest region (correlation coefficient = 0.832), where the largest share of respondents came from (47.7%, Table 1).

The ratings were evaluated both as individual ratings (a numerical value from 0–10) and as classified into modified NPS groupings (unsupportive, neutral, supportive). A Kruskal-Wallis rank sum test of the grouped results showed no significant differences in the distribution of ratings across the regions at the institution ($P = 0.155$) or department level ($P = 0.316$). When analyzed as individual ratings, the ratings still showed no significant differences in distribution (institution $P = 0.473$, department $P = 0.441$).

Influence of Academic Rank

For their institution, the average perceived value of education reported by Full Professors was unsupportive (mean 5.14/10), which was greater than that for Associate Professors (mean 4.20/10) and Assistant Professors (mean 5/10) (Fig. 1). For their department, the average perceived institutional value of education reported by Full Professors was unsupportive (mean 6.40/10), which was greater than that for Associate Professors (mean 5.20/10) and Assistant Professors (mean 5.67/10; Fig. 1). A statistically significant

correlation was found ($P < 0.05$) between institution and department ratings for both Full Professors and Assistant Professors. There was an increased trend for Associate Professors to rate their division as “unsupportive” compared with other faculty ranks (OR = 1.761), although this finding was not statistically significant ($P = 0.342$).

The ratings between faculty ranks were analyzed as individual ratings and as classified into modified NPS groups. A Kruskal-Wallis test of the grouped results showed no statistically significant difference in either institution rating ($P = 0.834$) or department rating ($P = 0.569$) distribution between the 3 professor ranks. Similarly, no statistically significant differences were found when the results were analyzed as individual ratings.

Influence of Compensation

Participants were also asked to report means of compensation for their educational activities, including credits to their profit and loss statement bottom line or salary support for teaching activities (Table 2). Although the Kruskal-Wallis test did not reveal a statistically significant correlation between individual or departmental compensation and the distribution of ratings ($P > 0.05$ in all cases), summary statistics did show a more favorable trend in reported perceptions of educational support given to both the institution and department when financial compensation was provided to the department (Fig. 2).

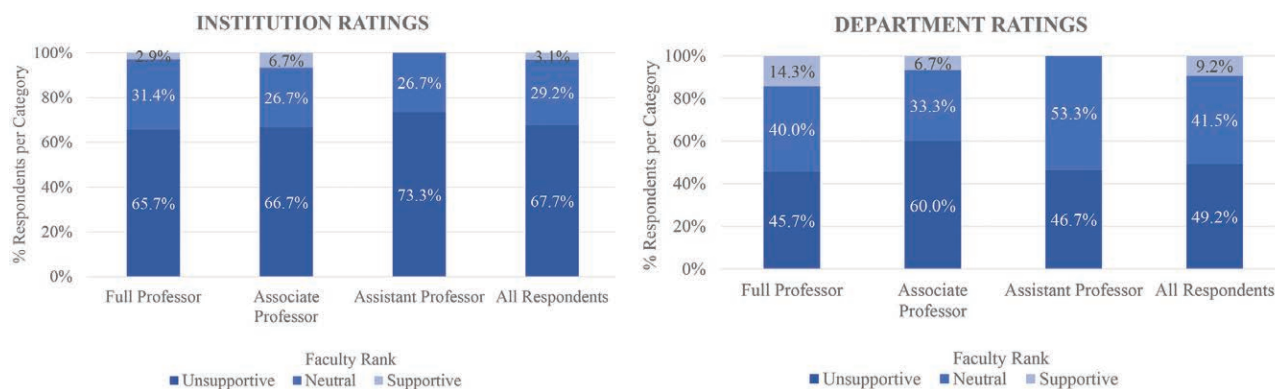


Fig. 1. Distribution of perception ratings by faculty rank. Ratings by U.S. academic plastic surgery faculty on the perception of the value placed on educational efforts by the plastic surgery department/division and the academic health institution, stratified by faculty rank of Assistant, Associate, or Full Professor. Ratings are based on survey responses using a Likert scale.

Table 2. Faculty Perceptions of Institutional and Departmental Support for their Educational Efforts Based on Whether the Individual Faculty or their Department Is Financially Compensated for Educational Activities

	Average Institution Support	Average Department Support
Individual compensation	<i>P</i> = 0.551	<i>P</i> = 0.833
Yes (n = 24)	5.29	6.04
No (n = 40)	4.65	5.93
Unknown (n = 1)	5.00	5.00
Department compensation	<i>P</i> = 0.390	<i>P</i> = 0.196
Yes (n = 24)	5.00	6.50
No (n = 27)	4.44	5.33
Unknown (n = 14)	5.57	6.21

Compensation refers to any direct financial support to the department or to the respondent for teaching activities from the School of Medicine affiliated with the institution, either as credit to their profit and loss statement bottom line or as direct salary support. Mean results are shown for values on a 0–10 Likert scale. Responses are based on the following adapted Net Promoter Score: “unsupportive” (0–6), “neutral” (7–8), and “supportive” (9–10).

Additional Comments

Respondents had the opportunity at the end of the survey to provide additional comments. Although these comments were not included in the statistical analysis, they serve to reinforce the validity of the other responses. Several comments noted that while “verbal credit” may be given for teaching endeavors, there is no consistent financial backing. Another prominent theme noted was that instruction time felt “presumed” or “incidental” in the wake of pressure from clinical responsibilities.

DISCUSSION

This is the first U.S. nationwide study of academic plastic surgical faculty perceptions of educational support within their department or institution. In this study, specific forms of educational support were not solicited, but examples of support were provided such as educational value units, reduced clinical productivity requirements,

line-item salary supports, and protected time for curricular development. The study findings revealed that although mean responses were higher for the department compared with the overall institution, both were perceived overall as unsupportive of educational efforts. The institution and department ratings were positively correlated, suggesting a general alignment between individual department and institutional attitudes toward educational activities.

An estimated 29–35% of plastic surgery residents go on to pursue a career in academia.^{8,16} However, one study found that as many as 79% of academic plastic surgeons leave academic medicine altogether. Physicians may regard compensation patterns as a reflection of their institution’s attitude toward different aspects of academic medicine. Of the plastic surgery faculty departing from positions in academia, some of the most common complaints include inadequate compensation, lack of autonomy, and university environment.^{17,18} Although physicians commonly cite intrinsic satisfaction from teaching as more important than compensation for the lost opportunity cost, retention for teaching preceptor positions remains highest when financial stipends are greater and given directly to the physician rather than the department or institution.^{19–22}

There are many potential explanations for the trends observed in this study. Evidence exists to suggest that an institution’s stated vision may be disconnected from actions at the hospital and departmental level, and this trend is confirmed by our study.²³ Further study is needed to identify whether this trend is a reflection of Plastic Surgery and other surgical departments or if this higher positive effect is a result of strength of ties with the department over the larger institutional body. A common free text response in our study was to comment on the scarcity of financial incentive for education relative to clinical productivity. The perceived lack of support for education may reflect the demotivation of faculty to continue teaching unreimbursed in a financially constrained environment. Specific strategies to solve this problem are complex and beyond the

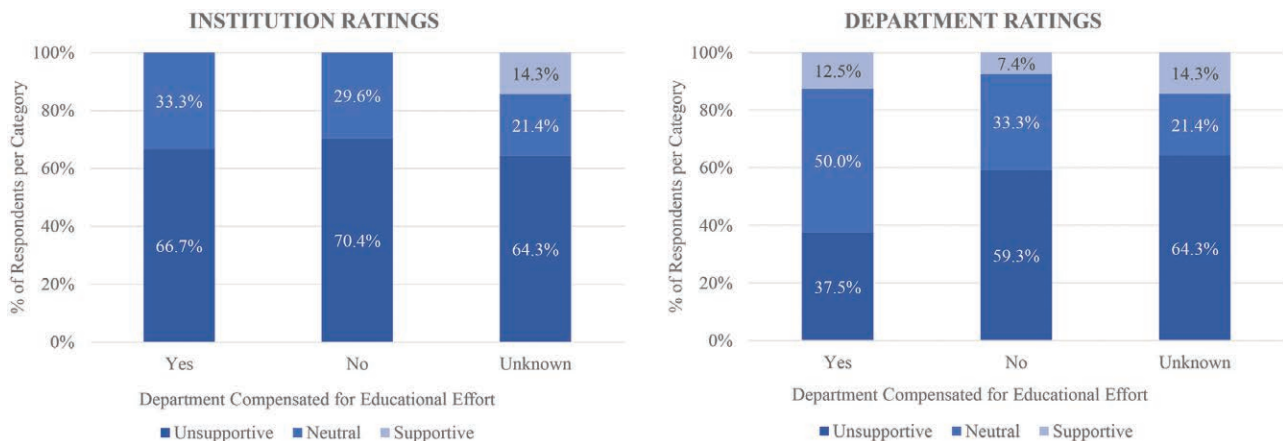


Fig. 2. Perceptions according to compensation status. Responses from academic plastic surgery faculty on the perception of the value placed on educational efforts by their department/division and their institution. Results are shown separately for respondents receiving financial compensation for their teaching efforts, paid to the A. department or B. individual faculty. Compensation refers to any direct financial support to the department or to the respondent for teaching activities from the School of Medicine affiliated with the institution, either as credit to their profit and loss statement bottom line or as direct salary support.

scope of this study, but our results provide baseline data on faculty perceptions of educational support to design further studies to answer this question. Future research on the effects of increased compensation for educational efforts on teaching quality, satisfaction with nonfinancial incentives, and physician retention would benefit our understanding of the motivations for plastic surgeons departing academic practice.

As with geographic distribution, no significant difference was found between respondents when evaluated across faculty rank using the described quantitative analysis. Thus, the finding that academic plastic surgeons generally perceive their home institution and department as “unsupportive” of educational development is not limited to a few institutions or regions or a single academic rank. However, Associate Professors gave department and institution ratings that were notably lower than either Assistant or Full Professors (Fig. 1). Associate Professors also showed a much wider spread of responses compared with other ranks. This is particularly interesting, given the body of research pertaining to physician burnout, which may influence a physician’s perception of their environment and place them at higher risk of medical error and early retirement.^{24,25} Although temporal affiliation generally seems to show that the risk of burnout drops the further along in one’s career, several recent studies among plastic surgeons show physicians in the middle of their careers (typically defined as 10–20 years and corresponding to the academic rank of Associate Professor) experiencing the most burnout.^{26,27} Similarly, our study also found an increased trend for Associate Professors to rate their division as “unsupportive” compared with Assistant or Full Professors.

LIMITATIONS

The response rate of 16%, albeit low, is similar to other online self-administered surveys without attached incentives.^{28–31} Nolte et al.³² commented on the issue of survey response rates and stated that there is no proven acceptable response rate; other studies of nonresponse bias note the nuance of response rates and that response rates cannot be taken in isolation.^{33–35} We believe nonresponders may introduce bias in this study, which may limit the generalizability of our results. However, in this study, the largest group of responders was involved in an education-related track and almost all responders were exposed to residents. Although ACAPS possessed a plurality of members from the Midwest region at the time of survey distribution, their percentage of membership was approximately 26% rather than the higher representation (48% of respondents) in our survey. Incidentally, half of the last 6 ACAPS presidents are also from the Midwest region, which could lead to more active local chapters and a higher participation rate. Even with this difference, comparisons between geographic regions in our study did not show any significant differences in terms of perception of education.

The NPS is a tool historically used to evaluate customer satisfaction, but has been modified for use in the health care field to study both patient and physician satisfaction with provided services.^{36–38} Physician valuations of their

institutional environment is analogous with customer satisfaction in that 3 outcomes are likely: reported experiences worse than expected, as expected, or better than expected.

CONCLUSIONS

The results of this novel study provide a baseline understanding of faculty perceptions of the educational environment within academic health systems based on a nationwide survey of academic plastic surgeons. The results demonstrate that the majority of faculty perceive their institution as unsupportive and their department/division only slightly less unsupportive in terms of the perceived institutional value of faculty efforts toward trainee education. Further study is warranted to appraise the potential benefit of different compensation models for faculty educational effort on plastic surgeon faculty retention within academic health systems. An improved environment for educational efforts may increase the percentage of plastic surgery trainees pursuing a career in academia and reduce physician burnout in the United States.

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