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The Perceived Value of the American Board of Anesthesiology Certificate: A Survey of 2,000 Anesthesiologists

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Abstract

Background

The present study was undertaken in order to identify anesthesiologists' perceptions regarding the value of the ABA certificate.

Methods

2,000 anesthesiologists received a 31-item survey designed to identify their demographics and their assessments of the functional and financial value of the certificate. Functional value was assessed using a five-point scale in the domains of professional recognition, personal satisfaction, job security, mobility and advancement, whether the certificate was necessary to obtain an academic or a clinical position, and whether it served as an indicator of depth or breadth of anesthesia knowledge or of clinical competence. Perceived professional lifetime financial value of the certificate was also assessed. Return response rate was 45.4%. Data were analyzed using descriptive statistics and student's t-tests.

Results

The ABA certificate was perceived to be most valuable in obtaining an academic position ($3.4 \pm .9$) and least valuable in indicating clinical competence (1.6 ± 1.2). Certified anesthesiologists consistently ascribed greater value to it than non-certified ones ($p < .001$) on all but the academic domain. No gender differences were observed except that females attributed a greater value to the certificate as a requisite for achieving job security. Sixty percent responded that certified anesthesiologists should earn more than non-certified ones and 54% ascribed to a professional lifetime financial value of over \$100,000 to ABA certification.

Conclusions

Although perceived as an objective credentialing instrument which could aid one's career, the ABA certificate was not viewed as an indicator of clinical competence.

Introduction

Following a decade of intensive political and professional organizational activities, the establishment of the American Board of Anesthesiology (ABA) occurred on June 2, 1937. Along with the inception of the written examination in 1939, these were pivotal events in defining anesthesiology and raising its stature as a recognized specialty distinct from other medical disciplines.¹⁻³ The fundamental objective of the ABA is to certify qualified candidates through the specialty boards and thus assure the public that diplomat status encompasses the level of knowledge, expertise and judgment necessary to ensure the provision of high quality anesthesia care.^{3,4}

With the recent growth of managed care plans and HMOs, increasing emphasis has been placed on the provision of cost effective, high-quality medical care. The growing use of the “board-certified only” criterion, as a prerequisite in selecting providers by such organizations, has led to the exclusion of physicians who are not board certified and limited patient access to health care.^{5,6}

Under such prevailing professional and financial circumstances, achieving board certified status has become increasingly less voluntary. These developments sparked a heated debate among physicians on the validity of certification as an assurance of quality care. Naysayers have been critical of the position held by the ABA that certification confers status indicative of expertise in matters related to anesthesiology. A review of the anesthesia literature indicates a paucity of data assessing the extent to which anesthesiologists regard the value of the ABA certificate. The present study was undertaken in order to identify anesthesiologists’ assessments of the functional and financial value of the ABA certificate and relate those to their socioacademic background.

Materials and Methods

Study Sample:

The names and addresses of 2000 anesthesiologists, nationwide, were randomly selected from the 1994 American Society of Anesthesiologists’ Directory of Members.⁷ Randomization was accomplished by the selection of every 16th member. The eligibility criterion for inclusion in the sample was active membership in the society. Resident, affiliate and honorary members were excluded. Although a power analysis undertaken to determine the appropriate sample size for a survey consisting of Likert-type variables indicated that a smaller number of participants was necessary, 2,000 anesthesiologists were selected to participate. This was done to account for the variability in survey response rates noted in previous studies^{8,9} and the low response rate in comparable surveys conducted by the American Society of Anesthesiologists.

Survey Description:

All participants were mailed a cover letter detailing the aim of this study and a request to complete an enclosed 30-item survey designed to determine personal and professional demographics as well as their assessments of the value of the board certificate (appendix A). The survey was to be administered anonymously and returned to the investigators in an enclosed stamped self-addressed envelope.

All returned questionnaires were edited for completeness. Open-ended answers were grouped together

where possible. Since the survey was administered anonymously, non-respondents could not be contacted for a follow-up administration or for subsequent comparisons with the respondents.

Statistical Analyses:

A coding guide for the survey items was developed to aid in the transcription of the survey data into a computer file. Accuracy of data entry was checked by examining the frequency of out-of-range coded responses on all survey items and by comparing the coded responses of twenty randomly selected surveys against the original responses. This revealed a very low error frequency ranging from 0-0.1%. Statistical analyses were performed using SPSS (Statistical Package for the Social Sciences). Descriptive statistics (i.e., measures of central tendency, frequency distributions) were obtained on respondents' demographics and on their assessments of the functional and financial values of the board certificate. Independent sample t-tests were performed on parametric data whereas chi square analyses were performed on non-parametric data. Where appropriate, data are presented as means \pm standard deviation. A $p < .05$ was accepted a priori as statistically significant.

Results

Respondent Characteristics:

Nine hundred and eight questionnaires were returned completed yielding a 45.4% return rate while 60 (3%) were returned undeliverable. Although most participants answered all of the survey questions, the number of participants cited in the analyses may vary because of missing data from incomplete surveys submitted by a few respondents. Respondents were 83% male ($n=708$) and 17% female ($n=142$), with mean age of 48 (± 12) years who had been practicing anesthesiology a mean of 15 (± 10) years, and had been certified for an average of 12 (± 10) years; 79% were graduates of U.S. medical schools ($n=686$), whereas 21% were international medical graduates ($n=187$); 85.6% were ABA diplomats ($n=750$), 5.5% had passed the written examination only ($n=48$) and 8.9% were not certified ($n=77$). There were no significant differences between males and females across the certification categories ($p > .10$). Respondents were Caucasian (83.5%), Asian (10%), Hispanic (3.9%), African American (1.8%), and other (0.7%). [Figures 1](#) and [2](#) present residency and work setting as well as income levels of the respondents, respectively.

To evaluate whether this sample of respondent anesthesiologists was representative of the total population of the ASA members, statistical analyses were performed on specific sociodemographic variables using available data on the total population of active ASA members ($n=21,681$).

Chi square analyses revealed no significant differences between our sample and the total ASA population on 3 out of 5 categorical variables including the geographic distribution of the respondents' state of residence, the respondents' gender, and the relative proportion of United States vs. International medical graduates ($p > .05$). Differences between our sample and the ASA were that our sample was older ($p < .05$) and included a slightly greater percentage of certified anesthesiologists 86% vs. 77% in ASA ($p < .05$).

The Functional Value of the ABA Certificate:

Respondents' assessments of the mean functional value of the ABA certificate in 11 domains as well as the

percentage of anesthesiologists who assigned “very much” or “extremely” levels of importance to the certificate (the two highest categories) are presented in descending order in [Table 1](#). Statistical analyses comparing each domain to the rest yielded significant differences consistently. In fact, a one decimal point mean difference between the domains rendered them statistically significantly different from each other at the .01 level. This was due to the large number of respondents in the study and to the decreased variability resulting from the same individuals responding to the same questions.

Consequently, in order to address the issue of meaningful clinical significance, the results were examined by comparing domains falling at the highest and lowest levels. Respondents indicated that the certificate was most important in obtaining either an academic or a clinical position and in job mobility and least valuable as an indicator of depth and breadth of knowledge in anesthesiology and of clinical competence. Approximately 50% of anesthesiologists reported that none of their patients requested information regarding their board certification. Among the remaining individuals, 22, 11, and 7% of anesthesiologists reported that 1, 5, and 10% of their patients, respectively, requested such information.

Certified anesthesiologists consistently ascribed a greater mean functional value to the ABA certificate than non-certified anesthesiologists ($p < .001$). This finding was observed in all domains assessed except for the academic domain. Both groups indicated that certification was equally valuable in obtaining an academic position ($p = .08$) ([Figure 3](#)).

Male and female anesthesiologists ascribed equal functional value to the certificate with the exception that females attributed a greater value to the certificate as a requisite for achieving job security ($p < .01$).

The Financial Value of the ABA Certificate:

Fifteen percent of anesthesiologists reported receiving a financial incentive for obtaining their certificate. Incentives included job promotion and salary increase or bonus (16%). The magnitude of financial incentives was \$10,000-\$40,000 (15%), \$5,000-\$10,000 (19%), less than \$5,000 (15%) and unspecified (35%). Anesthesiologists' evaluations of the professional lifetime financial value of the certificate are presented in Figure 4. Although 46.4% indicated that they were unable to estimate such value, the remaining 53.6% of anesthesiologists seemed to hold widely variable perceptions of its value. Twenty percent indicated that the certificate's value was equal to zero, although interestingly enough, some of them provided contradictory responses by further acknowledging that the certificate was necessary to remain in group practice or that it was a requirement to obtain medical staff privileges. Four percent of anesthesiologists assessed certification as priceless since, as they indicated, it ensured employability, afforded one the opportunity to obtain a position anywhere, and, therefore, a lifetime of income, especially in the current environment of managed care. A number of anesthesiologists responded by providing the following formula for estimating such value: Number of years in practice (ranging from 25 to 40) X annual salary (\$150-\$300 K) adjusted for inflation.

Should Certified Anesthesiologists Earn More?:

Sixty percent of all respondents believed that a board-certified anesthesiologist ought to be paid more than a non-certified one. A greater percentage of certified anesthesiologists (66%) responded affirmatively to this question than non-certified respondents (23%) ($p < .001$), and reported that certification merited a greater increase in earnings (27%) than non-certified respondents (17%) ($p < .001$).

Although the relative percentages of male and female respondents responding affirmatively to this question were not significantly different (60% and 61% respectively), more female anesthesiologists stated that certification merited an increase in income than male anesthesiologists ($p < .05$). Twenty-nine percent of women versus only thirteen percent of men reported that the certificate ought to result in at least a 50% increase in income.

Should Competence Recertification be Continued?:

Fifty-two percent of anesthesiologists approved a recertification process that is repeated periodically throughout one's professional life. Thirty-one and 36% percent of the respondents suggested that recertification take place every five or ten years, respectively, and 19% suggested a frequency between five to ten years. Nine percent of those who recommended recertification suggested repeating it in less than five years and the final 5% recommended it in more than ten years.

Is Certification Related to Income and Choice of Work Setting?:

In our sample, certification was found to be related to income level such that a significantly greater number of non-certified anesthesiologists reported an annual income between \$100,000 and \$200,000 ($n=61$), whereas a greater number of certified anesthesiologists ($n=287$) reported an annual income of \$200,000 to \$300,000 ($p < .05$).

Certification was also found to be related to work setting. More certified anesthesiologists were employed in a group fee-for-service practice ($n=433$), whereas more non-certified anesthesiologists ($n=35$) were employed in a solo practice ($p < .05$).

Discussion

The aim of the present study was to determine anesthesiologists' perceptions of the functional and financial value of the ABA certificate and to relate those to their socioacademic characteristics. The relatively high response rate, 45%, indicates that the subject of this survey is personally meaningful and of substantial significance to a large percentage of active ASA members. Our results suggested that anesthesiologists perceived the certificate as most instrumental in obtaining a position in an academic setting, followed by job mobility, and the opportunity to work in a clinical setting, as well. It is possible that the perception of the certificate being most important in obtaining an academic position, suggests that certification implies the presence of qualities essential to the work of an academician. These may include a quest for the acquisition of new knowledge, the pursuit of scholarly activities such as research, teaching, and manuscript preparation, and the presence of well-developed interpersonal communication skills required for instructing students and residents as well as consulting with colleagues. Or it may simply be custom for academic positions to require such certification. After all, since the goal of training programs is to prepare candidates for certification, how can uncertified individuals be credited with knowledge and expertise? In fact, the value of the ABA certificate in obtaining an academic position was the only survey item endorsed equally by both certified and non-certified anesthesiologists. Such unequivocal agreement further enhances its significance.

One surprising finding relevant to the certificate's functional value was that very few anesthesiologists perceived certification to be a good indicator of clinical competence. It may be that anesthesiologists

perceive that competence is recognized and evaluated exclusively by the departmental clinical competence committee throughout one's residency training and its presence is implied in the determination of the candidate's eligibility to undertake the anesthesiology board examination process. In this context, anesthesiologists may incorrectly perceive certification to be independent of the clinical experiences which preceded it. Another possible explanation may be that anesthesiologists perceive the examination process to be tapping more heavily into a fund of cognitive rather than technical skills and into other specific personal attributes and less heavily on the clinical administration of anesthesia over a wide array of situations.¹⁰ It appears that they perceive the certification process to be drawing upon only certain dimensions of the multidimensional construct of competence, perhaps ignoring issues such as vigilance, manual dexterity, or ability to perform in stressful situations. This is succinctly summarized by one of the respondent's statement, "Boards mean you are smart, not skilled." Or it may be that the certificate is perceived as a criterion of minimally acceptable performance indicating preparedness to practice¹¹ on the basis of assessments focused on clinical knowledge, synthesis and judgment at the time of the examination, rather than on the quality of care over an extended period of time in a variety of practice situations.

That certification was perceived to be least indicative of clinical competence appears to be inconsistent with the results of several studies. These studies found that board certified physicians tended to be more likely to implement medical innovations and change their practice in accordance with clinical research data, and their patients were more likely to recover from an adverse event.^{9,12,13} Furthermore, in a recently published study, Slogoff and colleagues¹⁴ presented evidence supporting the validity of the ABA certificate in identifying clinically superior anesthesiologists as judged by faculty who were familiar with the anesthesiologist's performance during residency.

As expected, board certified anesthesiologists consistently ascribed greater functional value to the certificate than did non-certified anesthesiologists. Overall, male and female anesthesiologists had similar responses to the functional value of the certificate with the exception that female anesthesiologists indicated that certification was more important in achieving job security. Females also ascribed a greater financial value to board certification and indicated that it should result in an even greater income differential. It is interesting that, in the professional domain, women appeared to rely more on the use of "an external, objective criterion" to ensure job security and felt that this milestone deserved greater compensation than did their male counterparts. Such responses may suggest that women still experience greater pressure in their efforts to obtain professional recognition.

We believe that the sample was sufficiently large and the 45.4% response rates sufficiently high to minimize the potential importance of non-response bias. Unfortunately, the anonymous administration of the survey prevented us from a subsequent follow-up of the non-respondents. It is possible that only the anesthesiologists with particular views on this subject returned the survey. However, the fact that our sample was comparable to the U.S. anesthesiology population in geographic distribution, gender and attendance in an U.S. or international medical school indicates that our results accurately typified the opinions of the entire ASA membership. That our sample was older was most likely the result of the exclusion of resident anesthesiologists. Finally, the greater percentage of certified anesthesiologists in our sample may have led to the ascription of relatively greater functional value to the certificate.

It is important to acknowledge that the domains used to determine the value of the ABA certificate were

not defined objectively and that their meaning may have varied depending on each respondent's characteristics and experiences. Such a diversity of interpretation may have occurred in the domains of "professional difficulties," "work advancement" whether the certificate indicated "depth or breadth of knowledge" or "clinical competence." The responses we obtained are impressions that may not be valid either due to the ambiguity of domain definition or to the fact that respondents may not have had detailed knowledge of the value of the certificate in each domain. However, our goal was to assess the subjective global perception of the value of this certificate in each domain and this approach seems to have accomplished it.

Although a large percentage of our respondents were unable or unwilling to present an estimate regarding the certificate's financial value, 54% expressed a specific dollar amount ranging from zero to priceless. The attribution of a low value to the certificate may reflect the outcome of the present changes in the marketplace for anesthesiologists. The current environment characterized by diminishing reimbursements and lessening availability of higher salary fee-for-service jobs may explain the perception of modest financial value of the certificate except for those who practice in an academic setting. This view is diametrically opposed to the widely held perception and practice of HMO's, that certification is frequently required to obtain and maintain work as an anesthesiologist. In fact, 4% of the anesthesiologists felt that the certificate afforded one the opportunity to obtain a position and, therefore, it was worth a lifetime of income. Despite their assessments of the certificate's modest financial value, 60% of anesthesiologists believed that a board-certified anesthesiologist should be paid more. Furthermore, our analyses on income and certification data revealed that board certified anesthesiologists are, in fact, paid more than non-certified ones.

Finally, it must be emphasized that these results represent exclusively the opinions of individuals who have undergone the certification process. It would be interesting to examine the perceptions of other groups, such as hospital administrators, surgical colleagues, third party payers and patients, to determine if their opinions match those of the anesthesiologists on the certification issue.

In summary, the ABA certificate is perceived as an objective credentialing instrument which affords diplomats an opportunity to obtain either an academic or a clinical position, as well as job mobility, advancement and greater income. Although it is perceived as an instrument which can aid one's career, it is not viewed as an indicator of one's clinical competence.

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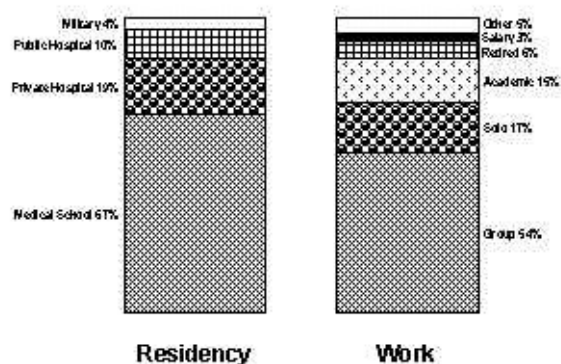
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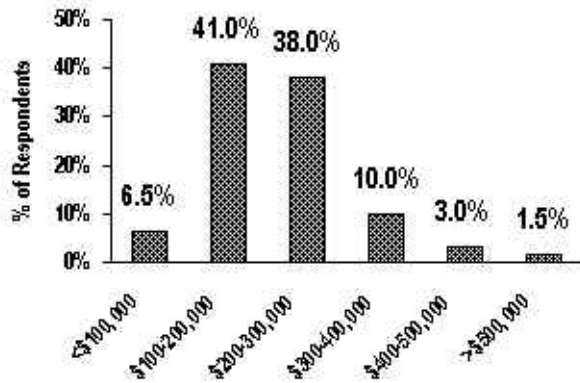
Figures and Tables

Figure 1



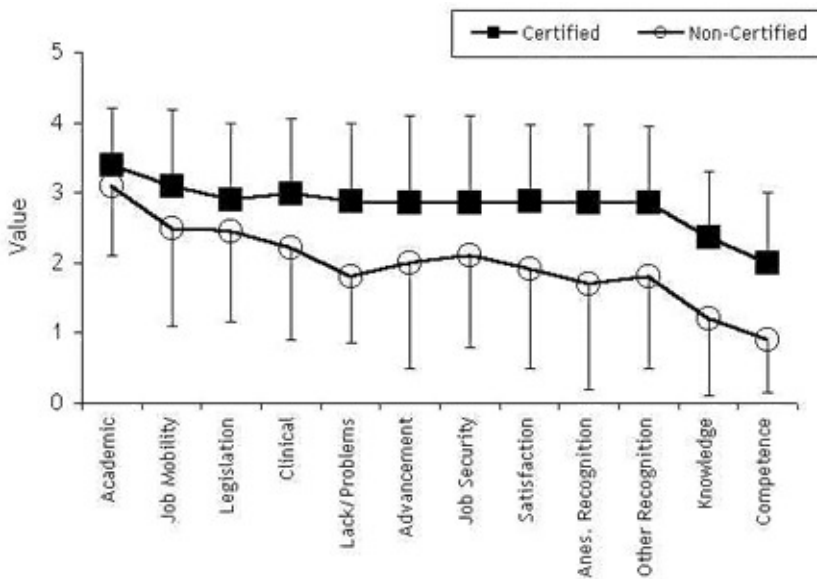
Respondents' choice of residency and work setting

Figure 2



Demographic Data (n=854): Income level

Figure 3



Value of the functions of the certificate according to certification status (p<0.001)

Table 1

Perceived Importance of the Functions of the ABA Certificate

Domain	Mean Value(SD)	% Respondents Ascribing Highest Value
Academic Position	3.41 (0.95)	86

Job Mobility	3.10 (1.09)	78
Clinical Position	2.80 (1.08)	68
Professional Difficulties	2.67 (1.09)	62
Work Advancement	2.66 (1.28)	61
Job Security	2.65 (1.29)	62
Personal Satisfaction	2.62 (1.19)	62
Colleague Recognition	2.53 (1.13)	57
Other Recognition	2.52 (1.13)	57
Depth of Knowledge	2.09 (1.14)	40
Clinical Competence	1.58 (1.16)	22

Values are based on a Likert scale (0=not at all, 1=somewhat, 2=moderately, 3=very much, 4=extremely).

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