Osteopathic Medical Students' Understanding of the Patient Protection and Affordable Care Act: A First Step Toward a Policy-Informed Curriculum

Elizabeth Ann Beverly, PhD; Daniel Skinner, PhD; Joseph A. Bianco, PhD; and Gillian H. Ice, AB, MPH, PhD

From the Department of Family Medicine and Social Medicine at the Ohio University Heritage College of Osteopathic Medicine (OU-HCOM) in Athens (Drs Beverly, Bianco, and Ice) and OU-HCOM in Dublin (Dr Skinner).

Financial Disclosures: None reported.

Support: None reported.

Address correspondence to Elizabeth Ann Beverly, PhD, Department of Family Medicine, Ohio University Heritage College of Osteopathic Medicine, 309 Grosvenor Hall, One Ohio University, Athens, OH 45701-2979.

E-mail: beverle1@ohio.edu

Submitted April 15, 2014; final revision received October 22, 2014; accepted December 3, 2014.

Context: Current osteopathic medical students will play an important role in implementing, modifying, and advocating for or against the Patient Protection and Affordable Care Act (ACA) of 2010. Accordingly, medical educators will need to address curricular gaps specific to the ACA and medical practice. Research that gauges osteopathic medical students' level of understanding of the ACA is needed to inform an evidence-based curriculum.

Objective: To assess first- and second-year osteopathic medical students' beliefs about the ACA.

Methods: In this descriptive cross-sectional survey-based study, first- and second-year students were recruited because their responses would be indicative of what, if any, information about the ACA was being covered in the preclinical curriculum. A 30-item survey was distributed in November 2013, after the health insurance exchanges launched on October 1, 2013.

Results: A total of 239 first- and second-year osteopathic medical students completed the survey. One hundred ten students (46%) disagreed and 103 (43.1%) agreed that the ACA would provide health insurance coverage for all US citizens. The ACA was predicted to lead to lower wages and fewer jobs (73 students [30.5%]), as well as small business bankruptcy because of employees' health insurance costs (96 [40.2%]). Regarding Medicare recipients, 113 students (47.3%) did not know whether these individuals would be required to buy insurance through the health insurance exchanges. The majority of students knew that the ACA would require US citizens to pay a penalty if they did not have health insurance (198 [82.8%]) and understood that not everyone would be required to purchase health insurance through health insurance exchanges (137 [57.3%]). Although students took note of certain clinical benefits for patients offered by the ACA, they remained concerned about the ACA's impact on their professional prospects, particularly in the area of primary care.

Conclusion: These findings build on the existing literature that emphasize the need for incorporating into the osteopathic medical curriculum knowledge of the dynamics of health care policy and reform and for creating opportunities for students to follow health policy developments as they evolve in real time.

J Am Osteopath Assoc. 2015;115(3):157-165
doi:10.7556/jaoa.2015.029

The Patient Protection and Affordable Care Act (ACA) of 2010[1] presents the United States with a unique opportunity to improve the quality and affordability of health insurance, lower the rate of uninsured citizens by expanding insurance coverage, and reduce health care costs.[2] Under the ACA, the Congressional Budget Office estimates that an additional 34 million people will gain access to health care by 2021.[2] Combined with population growth and a growing elderly population, expanded insurance coverage will drastically increase the demand for health care services.[3] On January 1, 2014, state and federal governments implemented 2 key elements of the ACA: Medicaid expansion eligibility for adults with incomes at or below 138% of the federal poverty level and health insurance exchanges and coverage from the Health Insurance Marketplace.[4,5] These key elements, in addition to previous provisions aimed at increasing access to affordable care (eg, increasing the amount Medicaid contributes toward primary care physicians, effective January 1, 2013) and improving quality and lowering costs (eg, annual wellness visits are covered for Medicare patients, effective January 1, 2011) are shifting the landscape of the US health care system. As Norman E. Vinn, DO, former president of the American Osteopathic Association acknowledged, "The US health care landscape is changing rapidly and irrevocably, which is forcing the medical profession to evolve and adapt."[6]

Unless the ACA is repealed or defunded, medical students will be practicing under this new health care system. Therefore, medical education needs to address curricular gaps specific to the ACA and how it affects osteopathic medical practice. Given the controversial and political nature of the ACA, osteopathic medical education will also need to address common misconceptions about the Act. However, before osteopathic medical educators can implement curricular changes, research is needed to inform an evidence-based curriculum. Thus, the objective of this study was to assess first- and second-year osteopathic medical students' beliefs about the ACA.

Methods

In the current descriptive cross-sectional survey-based study, surveys were administered in November 2013, after the health insurance exchanges launched on October 1, 2013. The Ohio University Office of Research Compliance approved the protocol and all recruitment procedures and materials.

Participants

We invited first- and second-year osteopathic medical students enrolled at Ohio University Heritage College of Osteopathic Medicine to participate in an assessment of beliefs about the ACA. We selected students in the first and second years of medical school because they were enrolled in the pre-clinical curriculum. At the time, the pre-clinical curriculum did not contain any formal courses about the ACA, which reflects a potential curricular gap.

During the first week of November, we recruited students by means of an e-mail that included a brief introduction to the study and a link to the survey. A follow-up e-mail was sent 2 weeks after the initial e-mail to remind participants about the study. Participation was voluntary.

All participants provided informed consent online before survey completion. Without the presence of researchers, students may have felt less pressure than they would have in a face-to-face consent process. To give consent, participants clicked a radio button indicating "Yes, I consent to participate in this study. I may withdraw my participation at any time." To decline, participants clicked a radio button indicating "I decline to participate." To avoid coercion, the online screen to the survey and the informed consent page both specified the voluntary nature of participation. The informed consent document explicitly informed potential participants that their responses had no bearing on academic performance and that they could decline participation at any time during the process. We directed participants with questions about the study to contact the principal investigator (E.A.B.) by e-mail or telephone.

Survey Development

A panel of researchers, including a health behaviorist, a clinical psychologist, a biological anthropologist, and a medical historian developed the survey items specifically for this study. The panel referred to current literature on the ACA and added supplemental information from the media and group discussions to develop the statements. Next, to establish face validity and content validity, the panel, along with a health policy expert, reviewed and rated each survey item to determine whether it was necessary, useful, and relevant to the construct being measured.

The final version contained 30 items measuring beliefs about the ACA on a 6-point scale, with 1 indicating strongly disagree; 2, disagree; 3, agree; 4, strongly agree; 5, do not know; and 6, do not understand terminology. Participants also completed a short demographic form.

Data Collection and Analysis

Participants completed the survey online through Qualtrics, an online questionnaire service. Completion of the survey took approximately 15 minutes. The service permitted our research team to download students' survey responses into a spreadsheet without including identifying information (ie, e-mail address and name) to ensure anonymity of patient data.

Basic sociodemographic characteristics of participants were assessed using descriptive statistics. Frequencies of individual item responses were also calculated. We used χ^2 analyses to examine differences in responses by age, sex, and year in medical school. Statistical significance was defined as a P value less than .05. All analyses were conducted using SPSS statistical software version 21.0 (SPSS Inc).

Results

Two hundred thirty-nine of the 280 enrolled students completed the survey for an overall participation rate of 85.4%. Demographic characteristics are presented in *Table 1*. Frequencies for the students' responses to each of the 30 survey items are presented in *Table 2*. In the following sections and in *Table 2*, the responses "strongly agree" and "agree" are aggregated as "agree," and the responses "strongly disagree" and "disagree" are aggregated as "disagree."

Truths and Misconceptions About the ACA

Most students (198 [82.8%]) knew that under the ACA, US citizens would have to pay a penalty if they do not have any health insurance (*Table 2*). Most students (137 [57.3%]) also understood that not everyone would be required to purchase health insurance through health insurance exchanges; however, 110 (46%) disagreed and 103 (43.1%) agreed that the ACA would provide health insurance coverage for all US citizens. The majority of students (136 [57%]) believed that health care premiums would increase as a result of the ACA; yet, students were unsure whether people who kept their current health insurance would receive any benefit from the ACA (73 [30.5%] disagreed, 86 [36.0%] agreed, and 79 [33.1%] did not know). Importantly, 182 students (76.2%) knew that the ACA would mandate essential health benefits such as mammography, immunizations, and contraception. However, students did not know whether the ACA mandated that physicians ask about patients' sexual histories (137 [57.3%]) and authorized coverage of dental and vision checkups (128 [53.6%]; only children and adolescents aged <19 years are covered). Female students were more likely to know that the ACA would not mandate that physicians ask patients about their sexual history (P=.028).

Several survey items represented common misconceptions about the ACA frequently reported in the media. For example, many students (97 [40.6%]) were unsure about health care rationing, which may have been a result of the high-profile discourse of "death panels" in the media.[7] Regarding the statement on the ACA's coverage of abortion and contraception, 115 students (48.1%) believed that—and 90 (37.7%) were

unsure whether—the ACA would mandate abortion and contraceptive coverage (it mandates coverage for the latter, with exemptions for religious purposes, but not the former). Also, many students (104 [43.5%]) were unsure whether spouses would lose their partner's health insurance plan coverage as a result of the ACA. The controversial idea of "socialized medicine" was reflected in the students' responses, with 136 students (69.9%) either believing that the ACA was modeled after socialized medicine like the health services in Canada and Great Britain or being unsure.

Sociopolitical Misconceptions About the ACA

Although we did not present students with deeper philosophical questions about the nature of health care, such as personal responsibility, rights, and social justice, the survey results did reveal anxieties about deservedness. For example, 130 students (54.4%) believed that the ACA would burden middle-class citizens with the financing of health care for the poor population and undocumented immigrants, and 47 (19.7%) did not know. Furthermore, 73 students (30.5%) felt that the ACA would lead to lower wages and fewer jobs in the United States, and 119 (49.8%) felt that many citizens would not be able to find full-time jobs because the ACA requires businesses to provide full-time employees with health insurance benefits. Similarly, 96 (40.2%) agreed that small businesses would be more likely to go bankrupt because they had to pay for employees' health insurance.

Perceived Importance of Primary Care Medicine

Although 106 students (44.4%) were planning to pursue a career in primary care (*Table 1*), 145 (60.7%) disagreed with the statement that the ACA would influence more medical students to practice primary care in the future. Primary care was predicted to become more prestigious as a result of the ACA by 40 students (16.7%).

Table 1.
Understanding of the Patient Protection and Affordable Care Act: Demographic Characteristics of Study Participants (N=239)[a]

Characteristics	Participants
Age, y, mean (SD)	24.5 (2.4)
Female Sex	114 (47.7)
Year in Training	
FIrst year	120 (50.2)
Second year	119 (49.8)
Ethnicity/Race Self-Identification	
Nonhispanic white	190 (80.5)
Asian	10 (4.3)
Black	10 (4.3)
Mixed race	8 (3.4)
Hispanic	6 (2.6)
American Indian	1 (0.4)
Other	11 (4.7)
Specialty Interest	
Primary care[b]	106 (44.4)
Emergency medicine	22 (9.2)
General surgery	24 (10.0)
Surgical subspecialty	12 (5.0)
Undecided	34 (14.2)
Other	45 (18.8)
Community (Population)	
Major metropolitan area (≥1,000,000)	17 (7.1)
Metropolitan area (500,001-1,000,000)	18 (7.5)
City (100,001-500,000)	44 (18.4)
Small city (50,001-100,000)	43 (18.0)
Town (2500-50,000)	87 (36.4)
Rural area (<2500)	29 (12.1)
Married	30 (12.6)

[a] Data are given as No. (%) unless otherwise indicated. Values were missing for age (n=7), sex (n=3), race (n=2), and community (n=1); thus, some percentages do not total 100.
[b] Family medicine, internal medicine, pediatrics, and obstetrics and gynecology.

Table 2.
Frequencies of Study Participants' Beliefs About the ACA (N=239)[a,b]

Survey Statement	Disagree[c]	Agree[d]	Do Not Know	Do Not Understand Terminology
1. Under the ACA, everyone in the United States will have health insurance.	110 (46.0)	103 (43.1)	24 (10.0)	2 (0.8)
2. Under the ACA, everyone must buy coverage through state and federally run exchanges.	137 (57.3)	69 (28.9)	30 (12.6)	3 (1.3)
3. As a result of the ACA, more medical students will elect to practice primary care in the future.[b]	145 (60.7)	45 (18.8)	48 (20.1)	0
4. The ACA allows insurance companies to reimburse physicians based on patient outcomes.[b]	26 (10.9)	131 (54.8)	81 (33.9)	0
5. Small businesses will be more likely to go bankrupt because they will have to pay for their employees' health insurance as a result of the ACA.	96 (40.2)	96 (40.2)	42 (17.6)	5 (2.1)
6. Under the ACA, spouses who are currently covered under their partner's plan will lose that insurance coverage.[b]	105 (43.9)	28 (11.7)	104 (43.5)	1 (0.4)
7. Medicaid expansion from the ACA will force physicians to turn away patients.	73 (30.5)	95 (39.7)	69 (28.9)	2 (0.8)
8. The ACA mandates coverage of services that may not have been covered previously, including mammography screenings, certain immunizations, and contraception.	9 (3.8)	182 (76.2)	44 (18.4)	4 (1.7)
9. New payment methods in the ACA will eliminate fee-for-service.	57 (23.8)	65 (27.2)	109 (45.6)	8 (3.3)
10. The ACA mandates that physicians ask patients about their sexual history.	38 (15.9)	64 (26.8)	137 (57.3)	0
11. Under the ACA, Americans on Medicare will be forced to buy insurance through the exchanges.[b]	72 (30.1)	47 (19.7)	113 (47.3)	5 (2.1)
12. The ACA includes patient satisfaction as a metric for physician reimbursement.	38 (15.9)	127 (53.1)	74 (31.0)	0
13. As a result of the ACA, small physician practices will be bought out by larger practices and hospitals.[b]	49 (20.5)	139 (58.2)	50 (20.9)	0
14. Under the ACA, Americans will have to pay a penalty if they do not have any health insurance.	12 (5.0)	198 (82.8)	29 (12.1)	0
15. Primary care will become a more prestigious specialty as a result of the ACA.	132 (55.2)	40 (16.7)	66 (27.6)	1 (0.4)
16. Under the ACA, Medicare beneficiaries will no longer be able to see their current doctors.	113 (47.3)	51 (21.3)	74 (31.0)	1 (0.4)

(continued)

Table 2 (continued).
Frequencies of Study Participants' Beliefs About the ACA (N=239)[a,b]

Survey Statement	Disagree[c]	Agree[d]	Do Not Know	Do Not Understand Terminology
17. Many Americans will not be able to find full-time jobs because the ACA requires businesses to provide all full-time employees with health insurance; thus, many employers will begin to hire only part-time workers.	60 (25.1)	119 (49.8)	58 (24.3)	2 (0.8)
18. Under the ACA, the federal government can withhold Medicare payments from hospitals if too many patients return within 30 days of discharge.	17 (7.1)	130 (54.4)	92 (38.5)	0
19. Over time, the ACA will replace Medicare.	73 (30.5)	57 (23.8)	108 (45.2)	1 (0.4)
20. Individuals who keep their current health insurance will not receive any benefit from the ACA.	73 (30.5)	86 (36.0)	79 (33.1)	1 (0.4)
21. Health care premiums will increase because of the ACA.[b]	37 (15.5)	136 (56.9)	63 (26.4)	2 (0.8)
22. As a result of the ACA, the middle class will be forced to pay for health care for poor people and illegal immigrants.[b]	61 (25.5)	130 (54.4)	47 (19.7)	0
23. Under the ACA, dental and vision checkups will be covered for adults and children.	31 (13.0)	80 (33.5)	128 (53.6)	0
24. The ACA will interfere with physicians' practice of medicine by shifting decision-making authority from physicians to the government.	54 (22.6)	130 (54.4)	55 (23.0)	0
25. The ACA mandates abortion and contraceptive coverage for women.	33 (13.8)	115 (48.1)	90 (37.7)	1 (0.4)
26. The ACA will lead to lower wages and fewer jobs in the United States.	80 (33.5)	73 (30.5)	85 (35.6)	1 (0.4)
27. Some states could go bankrupt, owing to the federal expansion of Medicaid required by the ACA.[b]	68 (28.5)	75 (31.4)	94 (39.3)	1 (0.4)
28. Under the ACA, the United States health care system will model itself after countries with socialized medicine, such as Canada and those in Great Britain.	72 (30.1)	103 (43.1)	64 (26.8)	0
29. Government-run panels will ration care under the ACA.[b]	56 (23.4)	82 (34.3)	97 (40.6)	3 (1.3)
30. The ACA still might be repealed or defunded.[b]	56 (23.4)	113 (47.3)	68 (28.5)	1 (0.4)

[a] Data are given as No. (%).
[b] Values were missing for the following questions: 3 (n=1), 4 (n=1), 6 (n=1), 11 (n=2), 13 (n=1), 21 (n=1), 22 (n=1), 27 (n=1), 29 (n=1), and 30 (n=1).
[c] Strongly disagree and disagree responses.
[d] Strongly agree and agree responses.

Abbreviation: ACA, Patient Protection and Affordable Care Act.

Understanding ACA Payment Reforms

Responses to a particular group of statements produced an interesting but jumbled picture of students' views of ACA payment reforms: 109 students (45.6%) did not know whether new payment methods in the ACA would eliminate fee-for-service arrangements, and 130 (54.4%) knew that the ACA would empower the federal government to withhold Medicare payments from hospitals if too many patients returned within 30 days of discharge. Furthermore, 131 students (54.8%) understood that the ACA would allow insurance companies to reimburse physicians based on patient outcomes (Medicare and Medicaid are following the new payment methods, and several commercial payers also are moving forward). Students who were older (P=.004), male (P=.047), and in their second year of medical school (P=.004) were more likely to agree with this statement. Patient satisfaction as a metric for physician reimbursement under the ACA was understood by 127 students (53.1%); second-year students (P=.044) were more likely to agree with this statement.

Lack of Understanding About Medicare and Medicaid Reform

Students reported uncertainty concerning the future of Medicare, with 108 (45.2%) not knowing whether the ACA would replace it over time; older students were more likely to disagree with this statement (P=.028). A majority of students 125 (52.3%) agreed or did not know whether Medicare beneficiaries would be able to continue to see their current physicians under the new law. And 113 (47.3%) did not know whether Medicare recipients would be required to buy insurance through the health insurance exchanges (Medicare Open Enrollment is not part of the Health Insurance Exchange Marketplace). Concerning Medicaid, many students either agreed 75 (31.4%) or did not know 94 (39.3%) whether the federal expansion would bankrupt states. These students were divided somewhat evenly (73 [30.5%] disagreed; 95 [39.7%] agreed; and 69 [28.9%] did not know) regarding their views on whether the Medicaid expansion would force physicians to turn away patients.

Anxiety About the Future of Medical Practice

Most of the students' responses indicated a great deal of uncertainty about the future of medicine. For example, the majority of students 181 (75.8%) agreed or did not know whether the ACA would be repealed or defunded. The ACA was believed to interfere with physicians' practices by shifting decision-making authority to the government by 130 (54.4%) of students. Many students expressed concern about small physician practices being bought out by larger practices or hospitals as a result of the ACA (139 [58.2%] agreed; 50 [20.9%] did not know).

Discussion

Research suggests that medical students may lack a basic understanding of the ACA and health policy.[8-10] Our data suggest the need for qualifying this belief. We found several areas in which students were clear about the ACA, particularly with regard to its potential benefits for patients, such as certain mandated procedures, suggesting a category distinction between the clinical impact of the ACA and the legislation's impact on professional and financial matters. Thus, medical educators should consider clarifying the ACA's potential benefits for patients in our patient-centered field of osteopathic medicine.

The large number of "do not know" answers among our findings lends itself to different interpretations. These unknowns suggest that medical students may be struggling to develop a coherent, informed opinion about the ACA, which could limit their ability to participate in shaping the ACA's implementation and revision over coming years. However, students' willingness to admit what they do not know presents an opportunity to clarify the messaging and open the curricular offerings. Some-

thing as simple as making reputable news sources, trade publications, and resource lists widely available and visible on campus may have a large effect on students' news and journal consumption habits. Future studies are needed to gather such data to better understand how students are formulating their beliefs about the ACA and current health policy in general.

Students expressed a great deal of uncertainty about the ACA's impact on the future of US health care. The majority of students agreed or did not know whether the ACA would be repealed or defunded. This uncertainty makes sense—even the policymakers who drafted the bill and the president who signed it cannot say with certainty what the effects will be in the upcoming years. The Congressional Budget Office does its best to predict the ACA's financial effects and the ultimate size of the US uninsured population, but this task is particularly difficult. Thus, students' uncertainties may reflect those inherent to the ACA itself and students' lack of knowledge about the health care system and its current payers (private, state, and federal).

The ACA provides funding and financial assistance for residency training in primary care, physicians practicing primary care, and faculty and curriculum development to increase the capacity for primary care physicians.[11] Given the well-documented primary care physician shortage in the United States,[3,12-14] as well as the particular focus of osteopathic medical schools on primary care, the findings of the current study with regard to primary care were puzzling. Considering that 44.4% of students reported an interest or plan in pursuing primary care, 60.7% disagreed with the statement that more medical students would elect to practice primary care in the future. Moreover, 55.2% of students believed that primary care will not become a more prestigious career option despite the ACA's investment in primary care.[15-17] Students may be gauging the ACA's impact on primary care through a lens of challenges rather than opportunities. For example, the challenges they know they will face, including increasing medical school debt, the slow growth of new residencies, and the lack of loan forgiveness programs for primary care physicians—all common narratives in medical school halls—may have influenced their responses.[18-22]

Limitations

Survey statements that focused on unintended consequences rather than actual content of the ACA, data from 1 medical school in the Midwest, participant self-selection, and self-reported data are limitations to the current study. Self-reported data are vulnerable to social desirability bias. We attempted to minimize this bias by informing participants that their survey responses were anonymous and could not be linked back to their personal identity. We emphasized the voluntary nature of participation and explicitly informed the participants that their responses had no bearing on academic performance. Beliefs about the ACA may differ between osteopathic and allopathic medical students. Thus, future assessment of beliefs in addition to specific content from the ACA is needed in both osteopathic and allopathic medical schools. Medical students' beliefs about the ACA may change over time as they immerse themselves in their clinical rotations in years 3 and 4. For this reason, future studies should conduct repeated assessments of students' beliefs and knowledge about the ACA across all 4 years. Currently, we are conducting a mixed-methods study examining osteopathic and allopathic medical students' knowledge, beliefs, and attitudes about the ACA.

Conclusion

Our results suggest both needs as well as opportunities for infusing a better understanding of the various dynamics of health care reform into medical education. These findings build on existing literature that emphasizes the need for increased instructional time devoted to medical economics, health care systems, managed care, practice management, and health policy developments as

they evolve in real time.[8,23,24] Osteopathic medical students may benefit from curricular changes that promote content in health policy and emphasize the importance of in-depth knowledge of policy to running successful and sustainable osteopathic medical practices. Medical education that provides students with foundational knowledge on how the US health care system is structured is needed. Implementing these curricular changes can strengthen lifelong learning.

Author Contributions

All authors provided substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; Dr Beverly drafted the article or revised it critically for important intellectual content; all authors gave final approval of the version of the article to be published; and all authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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