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University of Tennessee, Knoxville Undergraduate Students' Awareness and Opinions of the
Patient Protection and Affordable Care Act (ACA)

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Author Note

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ABSTRACT

The Patient Protection and Affordable Care Act dictates health care law today and therefore affects almost all Americans¹, making it important for individuals to understand the law's major components. This report specifically examines University of Tennessee, Knoxville undergraduate students' awareness and opinions of the Patient Protection and Affordable Care Act using a survey conducted on campus. This report also explores whether a relationship exists between an individual's knowledge and opinion of the ACA, including whether the ACA should be replaced or repealed. Out of 110 participants, the average knowledge score of the ACA was 5.25 (with a standard deviation of ± 1.56) out of 8. Participants who agreed that they understood the ACA, supported the ACA, and who indicated that the ACA should be "replaced" versus "repealed" had significantly higher knowledge scores than the other participants (all p values < 0.05). No correlations existed between knowledge score and age, class, or major/career path.

INTRODUCTION

The Patient Protection and Affordable Care Act (ACA) became law in 2010 and remains in effect today. Because everyone needs health care and because the ACA impacts each person's access to and the delivery of health care, it is crucial that all Americans be made aware of the major components of the law and understand how the ACA affects their lives. Many studies have been done among different groups of people to assess their respective knowledge and understanding of the law, but no study has specifically explored what, if anything, undergraduate students know about the ACA²⁻⁷. As adults poised to enter the workforce and who will ultimately have a part in shaping future health care policy, it is imperative that undergraduate students understand how the ACA has changed American health care and the future implications of the law. Furthermore, many undergraduates benefit from certain provisions of the ACA, such as the expansion of dependent coverage which allows college students to remain on their parents' health insurance plans until 26 years of age⁸. This study explores the knowledge and opinions of the ACA among undergraduate students at the University of Tennessee, Knoxville. The methods used in this study mimic that of a study done assessing medical students' views and knowledge of the ACA as published in the *Journal of General Internal Medicine*⁷. Survey questions were also taken from this previous study as they have been pilot-tested and verified.

METHODS

Study Population

The study required at least 96 participants, as determined by the National Statistical Service sample size calculator, all of whom were gathered through convenience sampling. After receiving approval from the University of Tennessee Institutional Review Board, participants were recruited from February to April 2017 through social media by posting two personal Facebook “statuses” encouraging undergraduate students at the University of Tennessee, Knoxville to participate in the study. The first Facebook status was posted in February and again in April as a second attempt to recruit additional participants. Only undergraduate students between the ages of 18 and 24 were included in the study. Students became participants by 1) voluntarily clicking on the survey link and 2) completing the entire Qualtrics-based survey via an electronic form. Completion of the electronic survey constituted informed consent. The final study population included 110 undergraduate students at the University of Tennessee, Knoxville ages 18 to 24. The names and identities of the participants were not recorded nor collected. The study presented no foreseeable risks for participants other than those encountered in everyday life, nor did it offer any incentives or potential benefits for the study population.

Survey and Procedure

This study was completed in Knoxville, Tennessee at the University of Tennessee, Knoxville. The survey used in this study was created with Qualtrics software and included three self-reported opinion questions, eight true/false knowledge questions, and three demographic questions. Two of the opinion questions asked participants to rate themselves on a five-point Likert scale (strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, strongly disagree).

strongly disagree) as to how well they understand the ACA and whether or not they support the ACA. The third opinion question asked participants to indicate whether they thought the ACA should be “repealed” or “replaced”, with a third “I don’t know” option. The knowledge questions addressed major components of the ACA and were adapted from a previously published survey of medical students in which the authors “performed cognitive testing” to ensure the “usability of the survey”⁷. Of the nine true/false knowledge questions used in the survey of medical students, one of the questions was omitted in this study as it pertained to medical professions. The demographic questions asked participants to indicate their age, classification, and major.

Analysis

Responses to survey questions from all 110 participants were reported as descriptives and frequencies. A cumulative knowledge score was calculated for the eight true/false questions for each participant, with a minimum score of 0 and a maximum score of 8 (1 point for each correct answer). SPSS (Statistical Package for the Social Sciences) Text Analytics for Surveys 4.0 software was used to perform bivariate correlation analysis (with no causality applied) between the first two opinion questions and the knowledge score (see correlation matrix). Univariate ANOVA (Analysis of Variance) within the SPSS software was used to compare relationships between the third opinion question, age, classification, major, and the knowledge score. A p value < 0.05 was considered statistically significant.

RESULTS

Study Population

The study population consisted of 110 participants, all of whom were undergraduate students between the ages of 18 and 24. The majority of participants reported themselves to be seniors (60.0%) and 20 to 22 years of age (85.5%). Most participants declared that they were neither a pre-health major nor pursuing a career in a health-related field (61.8%). Full self-reported demographics are listed in Tables 1, 2, and 3.

My age is...			
	Frequency	Percent	Cum. Percent
18	4	3.6	3.6
19	9	8.2	11.8
20	20	18.2	30.0
21	44	40.0	70.0
22	30	27.3	97.3
23	2	1.8	99.1
24	1	.9	100.0
Total	110	100.0	

Table 1. Self-reported ages of the study participants. The majority of participants (85.5%) were 20 to 22 years of age.

My classification is...			
	Frequency	Percent	Cum. Percent
Freshman	6	5.5	5.5
Sophomore	16	14.5	20.0
Junior	22	20.0	40.0
Senior	66	60.0	100.0
Total	110	100.0	

Table 2. Self-reported undergraduate classification of the study participants. The majority of participants (60%) were classified as seniors.

My major is...			
	Frequency	Percent	Cum. Percent
Pre-health major	26	23.6	23.6
Non pre-health major, but planning a career in health-related field.	16	14.5	38.2
Other	68	61.8	100.0
Total	110	100.0	

Table 3. Self-reported undergraduate majors of the study participants. The majority of participants (61.8%) were neither pre-health majors nor planning a career in a health-related field.

Views of the ACA

The majority of participants (61.8%) agreed either strongly or somewhat with the statement “I understand the basic components of the Affordable Care Act”. 28.2% disagreed with the statement. An even greater majority of participants (66.4%) either strongly or somewhat agreed with the statement “I support the Affordable Care Act”. 20.9% disagreed with the statement. For the third opinion question which asked whether the Affordable Care Act should be “repealed”, “replaced”, or “I don’t know,” responses were divided. Only 9.1% reported that the ACA should be repealed, 48.2% reported that the ACA should be replaced, and 42.7% reported that they did not know. Full self-reported responses to the opinion questions are listed in Tables 4 and 5.

	Number of Responses (%)		
	Strongly/Somewhat Agree	Neither Agree nor Disagree	Strongly/Somewhat Disagree
I understand the basic components of the Affordable Care Act.	68 (61.8%)	11 (10.0%)	31 (28.2%)
I support the Affordable Care Act.	73 (66.4%)	14 (12.7%)	23 (20.9%)

	Number of Responses (%)		
	Repealed	Replaced	I don't know
In my opinion, the Affordable Care Act should be...	10 (9.1%)	53 (48.2%)	47 (42.7%)

Tables 4 and 5. Self-reported opinions of the Affordable Care Act by undergraduate students at the University of Tennessee, Knoxville.

Knowledge of the ACA

Knowledge scores were calculated for each participant’s responses to the eight true/false knowledge questions regarding major components of the ACA. Each correct answer received one point, for a total maximum knowledge score of 8. The majority of respondents (70.0%) received a knowledge score of 5 or higher, with nearly half of all respondents (49.1%) receiving a knowledge score of 6 or higher. Two questions were answered incorrectly by nearly three-fourths of the respondents: “The Affordable Care Act creates a new government-run insurance

plan to be offered along with private plans” (74.5% answered incorrectly) and “The Affordable Care Act allows the federal government to expand Medicaid in every state” (72.7% answered incorrectly). These questions were also missed by a majority of participants in the medical student survey as published by the *Journal of General Internal Medicine*⁷. The mean knowledge score for the responses of all 110 participants was 5.25 with a standard deviation of ± 1.56 . Full reports of knowledge scores can be seen in Table 6, Figure 1, and Table 7.

The Affordable Care Act...	Number of Responses* (%)	
	TRUE	FALSE
Requires individuals to have health insurance or else pay a fine.	75 (68.2%)	35 (31.8%)
Creates a new government-run insurance plan to be offered along with private plans.	82 (74.5%)	28 (25.5%)
Allows the federal government to expand Medicaid in every state.	80 (72.7%)	30 (27.3%)
Defines benefits that private insurance companies must include in their insurance plans.	81 (73.6%)	29 (26.4%)
Creates health insurance exchanges or marketplaces where small businesses and individuals can purchase insurance and compare prices and benefits.	87 (79.1%)	23 (20.9%)
Prevents people from being denied coverage due to a pre-existing condition.	98 (89.1%)	12 (10.9%)
Enables young adults to stay on their parents' health insurance plan until age 26.	98 (89.1%)	12 (10.9%)
Increases the percentage of Americans who do not have health insurance.	29 (26.4%)	81 (73.6%)

Table 6. Participant responses to True/False questions regarding major components of the Affordable Care Act by undergraduate students at the University of Tennessee, Knoxville.

***Bolded** responses indicate correct answers.

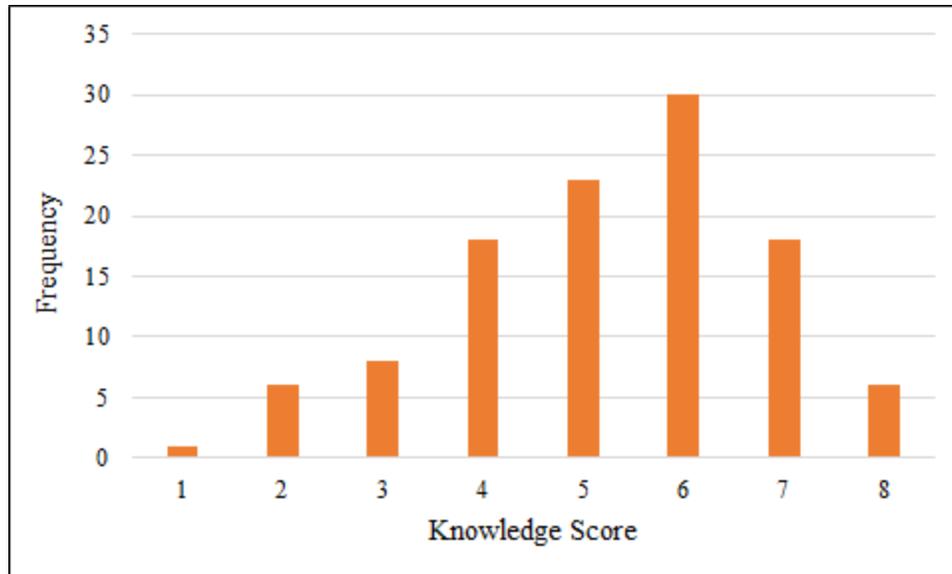


Figure 1. Frequency of knowledge scores among survey participants at the University of Tennessee, Knoxville.

	Minimum	Maximum	Mean	Std Deviation	Variance	Count
Knowledge	1.00	8.00	5.25	1.56	2.44	110

Table 7. Data report of knowledge scores for study participants. The mean knowledge score was 5.25 with a standard deviation of ± 1.56 .

Correlations and Relationships

Bivariate correlation and ANOVA analysis in SPSS indicated that statistically significant correlations exist between self-reported opinions of the ACA and knowledge of the ACA.

Positive correlations were found between 1) self-reported understanding and support of the ACA, 2) self-reported understanding of the ACA and a participant’s knowledge score, and 3) support of the ACA a participant’s knowledge score. Agreement with the statement “I understand the basic components of the Affordable Care Act” and agreement with the statement “I support the Affordable Care Act” resulted in a correlation value of $0.417 > 0.01$. Agreement

with the statement “I understand the basic components of the Affordable Care Act” and a participant’s knowledge score resulted in a correlation value of $0.275 > 0.01$. Agreement with the statement “I support the Affordable Care Act” and a participant’s knowledge score resulted in a correlation value of $0.253 > 0.01$. See full correlation matrix in Table 8.

Correlations

		I understand the basic components of the Affordable Care Act.	I support the Affordable Care Act.	Knowledge
I understand the basic components of the Affordable Care Act.	Pearson Correlation	1	.417**	.275**
	Sig. (2-tailed)		.000	.004
	N	110	110	110
I support the Affordable Care Act.	Pearson Correlation	.417**	1	.253**
	Sig. (2-tailed)	.000		.008
	N	110	110	110
Knowledge	Pearson Correlation	.275**	.253**	1
	Sig. (2-tailed)	.004	.008	
	N	110	110	110

Table 8. Correlation matrix detailing the significant positive correlations between participants’ self-reported opinions of the ACA and actual knowledge of the ACA.

** . Correlation is significant at the 0.01 level (2-tailed).

For the third opinion question which asked whether the ACA should be “repealed”, “replaced”, or “I don’t know”, ANOVA analysis using the general linear univariate model revealed that there was also a significant difference in knowledge scores between the three different response

groups. The mean knowledge score for participants in the three different response groups were 4.000 (± 0.485) for “repealed”, 5.434 (± 0.210) for “replaced”, and 5.319 (± 0.224) for “I don’t know” (Table 9). The knowledge scores between those who reported that the ACA should be “repealed” and those who reported that the ACA should be “replaced” are significantly different, with those who selected “replaced” receiving higher knowledge scores ($p \text{ value} = 0.023 < 0.05$). Similarly, the knowledge scores between those who reported that the ACA should be “repealed” and those who responded “I don’t know” are significantly different, with those who responded “I don’t know” receiving higher knowledge scores ($p \text{ value} = 0.045 < 0.05$). However, there is no significant difference in the knowledge scores of the participants who responded that the ACA should be “replaced” and those who responded “I don’t know” ($p \text{ value} = 1.000 > 0.05$). The full correlation report is listed in Table 10. Overall, the knowledge scores of participants who selected either “replaced” or “I don’t know” as responses are significantly different than those of participants who selected “repealed”, with the first group receiving higher knowledge scores ($p \text{ value} = 0.026 > 0.05$) (Table 11).

Estimates
Dependent Variable: Knowledge

In my opinion, the Affordable Care Act should be...	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Repealed	4.000	.485	3.039	4.961
Replaced	5.434	.210	5.017	5.851
I don't know	5.319	.224	4.876	5.762

Table 9. Knowledge score data in relation to participants’ responses to the third opinion question regarding the ACA. The group with the highest mean knowledge score consisted of participants who reported that the ACA should be “replaced”.

Pairwise Comparisons

Dependent Variable: Knowledge

(I) In my opinion, the Affordable Care Act should be...	(J) In my opinion, the Affordable Care Act should be...	Mean Difference (I-J)	Std. Error	Sig. ^b
Repealed	Replaced	-1.434*	.528	.023
	I don't know	-1.319*	.534	.045
Replaced	Repealed	1.434*	.528	.023
	I don't know	.115	.307	1.000
I don't know	Repealed	1.319*	.534	.045
	Replaced	-.115	.307	1.000

Table 10. Pairwise comparisons of the knowledge scores of all three participant respondent groups: that the ACA should be “repealed”, “replaced”, or “I don’t know”. The mean knowledge score of the “repealed” group is significantly different than that of both the “replaced” and the “I don’t know” groups.

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests

Dependent Variable: knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	17.641	2	8.821	3.757	.026
Error	251.232	107	2.348		

Table 11. Shows that the knowledge scores of participants who selected either “replaced” or “I don’t know” as responses are significantly different than those of participants who selected “repealed”, with those who selected “replaced” or “I don’t know” receiving higher knowledge scores (p value = 0.026 > 0.05).

DISCUSSION

Overall, the majority of respondents indicated support for the ACA and understood at least some of the law's major components. Those who have a better understanding of the ACA, as denoted by higher knowledge scores, are more likely to support the law. Hence, those who do not understand the ACA as well as those who support it are less likely to support the law. Furthermore, participants with higher knowledge scores are also more likely to support replacement of the ACA versus repeal, and participants with lower knowledge scores are more likely to support complete repeal of the ACA versus replacement.

The results from this study of undergraduate students are consistent with the results of previous studies of other focus groups⁷ and reflect commonly held misconceptions about certain provisions of Affordable Care Act⁹. One misconception is that the ACA expanded Medicaid (question answered incorrectly by 72.7% of participants). In reality, states were given the choice to expand Medicaid, and Tennessee is 1 of 19 states which elected not to expand Medicaid¹⁰. Furthermore, though the survey in this study did not ask participants to indicate affiliation with any political party, previous studies show that opinions of the Affordable Care Act often correlate with party lines⁹. As a supplement to previous studies regarding opinions and knowledge of the Affordable Care Act and evidence of public misconceptions about the law, this study further demonstrates the necessity for better education regarding the Affordable Care Act. Additionally, future studies should explore potential methods of educating undergraduate students and the general public to determine how to effectively address partisan opinions and false beliefs about the law. Future studies may also examine opinions and knowledge of the ACA among people of different genders, geographic locations, and even viewers of different news stations to better understand how and why inaccurate perceptions of the law persist.

As demonstrated by this study, it is necessary to provide more information of the ACA to undergraduate students in order to better educate them as to the long and short term effects of the law, especially since, and despite national debate over whether or not the Affordable Care Act should be repealed thereby rendering the law's future uncertain, the ACA remains the law of the land today. Therefore, it is of utmost importance that undergraduate students acquire the knowledge and skills needed to understand the law so that they may be equipped to contribute to the progression of health care as future physicians, policymakers, and consumers.

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INFORMED CONSENT STATEMENT

University of Tennessee, Knoxville Undergraduate Students' Awareness and Opinions of the Patient Protection and Affordable Care Act

INTRODUCTION

Participants are invited to participate in a research study. The purpose of the study is to investigate University of Tennessee, Knoxville undergraduate students' awareness and opinions of the Patient Protection and Affordable Care Act (ACA) using a survey conducted on campus. The survey questions are based on literature reviews of previous studies and focus on major aspects of the ACA, including how college age people are specifically affected. Survey responses will be analyzed to gain a better understanding of college students' awareness of the ACA.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

This study will be completed in Knoxville, TN at the University of Tennessee, Knoxville. Individuals will choose whether or not to participate, based on their own interests, and the population sample will be largely dependent on volunteerism. Participants must be 18 to 24 year old undergraduate students at the University of Tennessee, Knoxville. Participants will complete a survey of close-ended questions regarding major aspects of the ACA and his or her own opinion of the ACA. This will take no more than 15 minutes per participant.

RISKS

There are no foreseeable risks other than those encountered in everyday life.

BENEFITS

There are no real benefits to individual participants of the study. Potential societal and scientific benefits of this research include gaining a better understanding of college students' awareness of the ACA. Since the ACA is a law that directly or indirectly affects most Americans, learning more about how much people know about the law is important.

CONFIDENTIALITY

The information in the study records will be kept confidential. Data will be stored securely and will be made available only to persons conducting the study. No information that could connect participants to the study will be collected, including name and identity, nor will it be communicated in oral or written reports.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study,) you may contact the researcher, Jennings

Hardee, at mhardee@vols.utk.edu, and (615)517-6017 or her advisor, Dr. Kathleen Brown, at kcbrown@utk.edu. If you have questions about your rights as a participant, you may contact the University of Tennessee IRB Compliance Officer at utkirb@utk.edu or (865)974-7697.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your data will be withdrawn from the data set and will not be included in any report.

CONSENT

I have read the above information. I agree to participate in this study. Clicking on the button to continue and completing the survey (questionnaire) constitutes my consent to participate.

SURVEY QUESTIONS

Please indicate to what extent you agree or disagree with the following statements

1. I understand the basic components of the Affordable Care Act.
 - a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree

2. I support the Affordable Care Act.
 - a. Strongly agree
 - b. Somewhat agree
 - c. Neither agree nor disagree
 - d. Somewhat disagree
 - e. Strongly disagree

3. In my opinion, the Affordable Care Act should be...
 - a. Repealed
 - b. Replaced
 - c. I don't know

Please select whether the following statements are true or false.

4. The Affordable Care Act requires individuals to have health insurance or else pay a fine.
 - a. True
 - b. False

5. The Affordable Care Act creates a new government-run insurance plan to be offered along with private plans.
 - a. True
 - b. False

6. The Affordable Care Act allows the federal government to expand Medicaid in every state.
 - a. True
 - b. False

7. The Affordable Care Act defines benefits that private insurance companies must include in their insurance plans.
 - a. True
 - b. False

8. The Affordable Care Act creates health insurance exchanges or marketplaces where small businesses and individuals can purchase insurance and compare prices and benefits.
 - a. True
 - b. False

9. The Affordable Care Act prevents people from being denied coverage due to a pre-existing condition.
 - a. True
 - b. False

10. The Affordable Care Act enables young adults to stay on their parents' insurance plan until age 26.
 - a. True
 - b. False

11. The Affordable Care Act increases the percentage of Americans who do not have insurance.
 - a. True
 - b. False

For the following questions, please select the response that best describes you.

12. My age is...
 - a. Under 18
 - b. 18
 - c. 19
 - d. 20
 - e. 21
 - f. 22
 - g. 23
 - h. 24
 - i. Over 24

13. My classification is...

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Graduate student
- f. None of the above

14. My major is...

- a. Pre-health major
- b. Non pre-health major, but planning a career in health-related field
- c. Other