

Knowledge and Attitude of Antibiotic Use Amongst College Students

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BACKGROUND

The Centers for Disease Control and Prevention (CDC) has declared antibiotic resistance as a global public health crisis. One of the most prominent contributing factors to antibiotic resistance is the inappropriate use of antibiotics. In a study published by the American Psychological Association in the Health Psychology Journal, a physician is more likely to prescribe antibiotics to patients who are expecting their physician to prescribe them antibiotics even if the infection may not be bacterial in nature. Non-adherence to completing the full course of an antibiotic therapy can also contribute to antibiotic resistance.

College students, especially those living in dormitories, are a vulnerable population to infections since they are in close proximities of each other. College students may be prone to the overuse of antibiotics in attempt to get better faster for the sake of school and exams or are non-adherent in completing their course of therapy; both contributing to antimicrobial resistance. Our hypothesis is that college students do not have adequate knowledge on antibiotic use and that their attitudes on antibiotic use may be inappropriate.

OBJECTIVES

The primary objective of this study is to evaluate the knowledge and attitude of antibiotic use amongst college students at St. John's University. The secondary objectives are to assess if students from various colleges (majors) or ethnicities may have implications to differences in the results.

METHODS

This study was IRB approved by St. John's University. A voluntary, anonymous, 10-item, paper survey was administered to students from all colleges at St. John's University during an Antibiotic Awareness Event hosted by the American Pharmacists Association Academy of Student Pharmacists (APhA-ASP) on November 16, 2017. Upon completion of the survey, students were entered in a raffle to win a \$50 Amazon gift card.

The 10-item survey included 2 questions to assess for baseline demographics (major and ethnicity), 4 questions (true, false, or don't know) to assess for basic knowledge of antibiotics, and 4 questions (5-point likert scale ranging from strongly agree to strongly disagree) to assess for attitudes towards antibiotic use. Quantitative analysis was used to sum up the results.

The average score for basic antibiotic knowledge was 75.1% (58.3%-100%). 24.5% (49/200) of the respondents expect a doctor to prescribe antibiotics when they have a cold. 37.5% (75/200) admit to stopping antibiotics prematurely when they feel better. 10% (20/200) give their antibiotics to someone who is sick and 8.5% (17/200) feel that it is acceptable to share antibiotics.

RESULTS

Table 1a. Breakdown of Colleges (n=200)		
Colleges	Actual #	Percentage (%)
College of Pharmacy & Health Sciences	81	40.5
St. John's College of Liberal Arts & Sciences	52	26
The School of Education	8	4
The Peter J. Tobin College of Business	28	14
College of Professional Studies	30	15
School of Law	1	0.5

Figure 1. Overall Results for Knowledge on Antibiotic Use

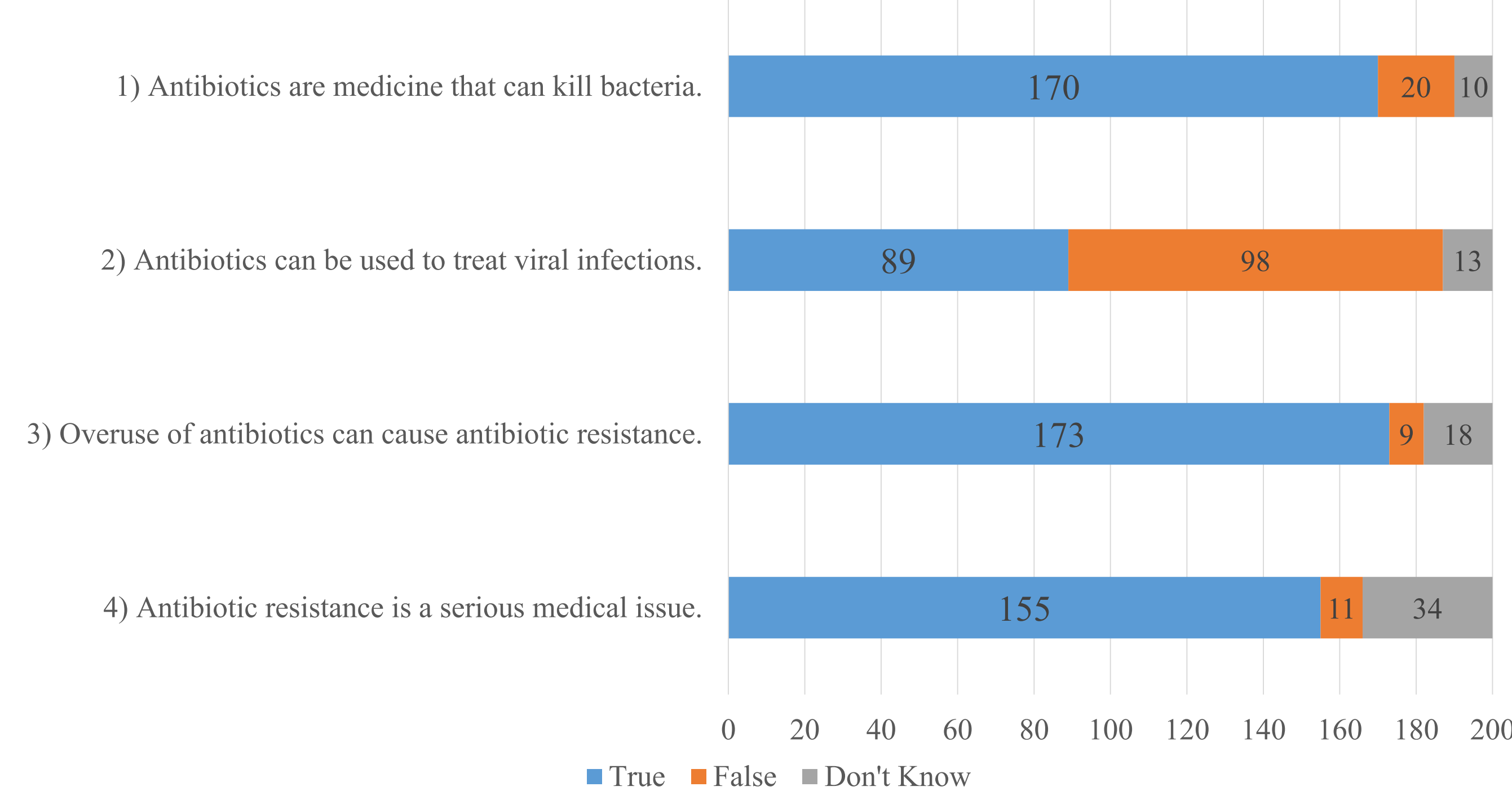


Figure 3. Overall Results for Knowledge on Antibiotic Use Based on Colleges

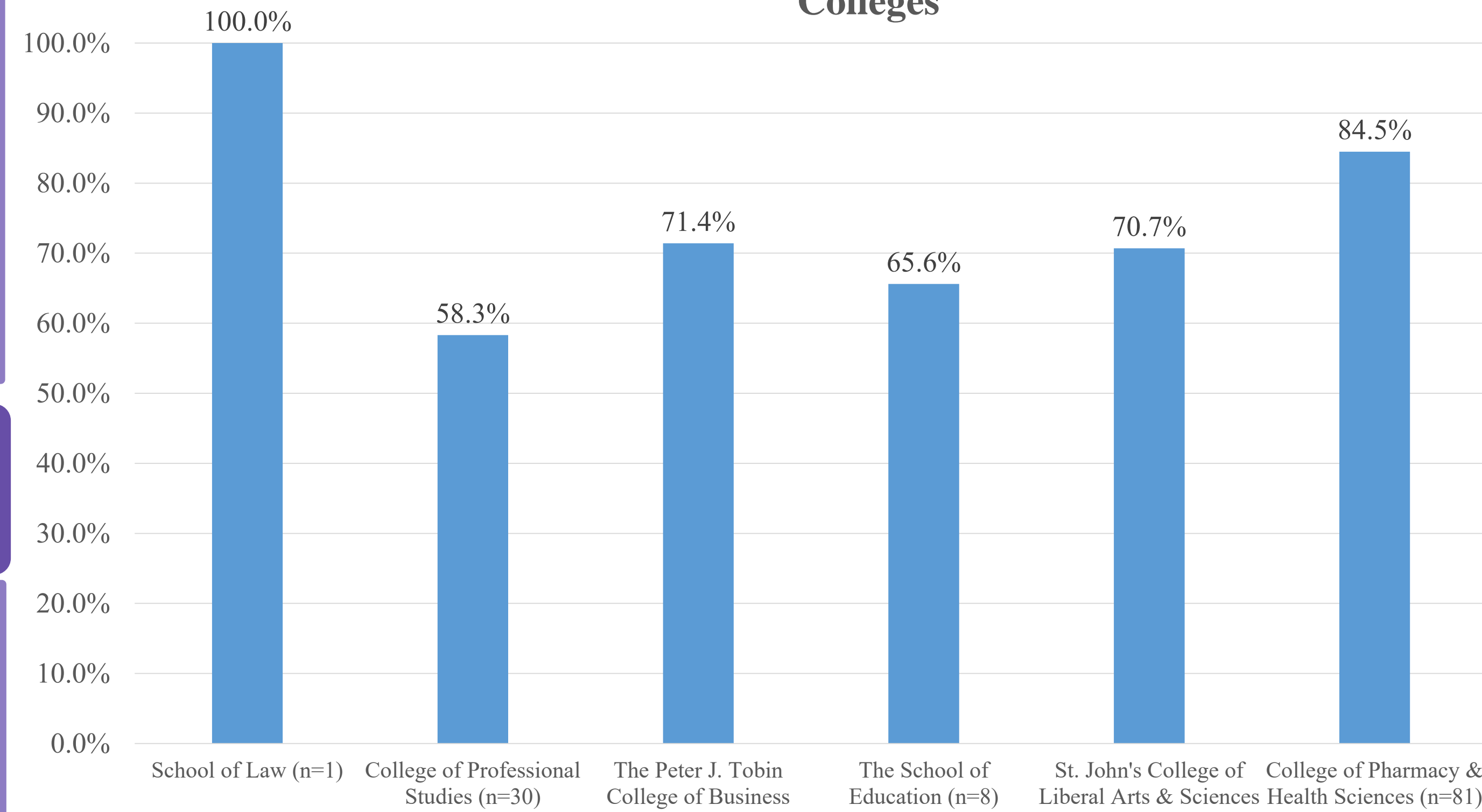


Figure 5. Overall Results for Attitude on Antibiotic Use Based on Colleges (Strongly Disagree/Disagree)

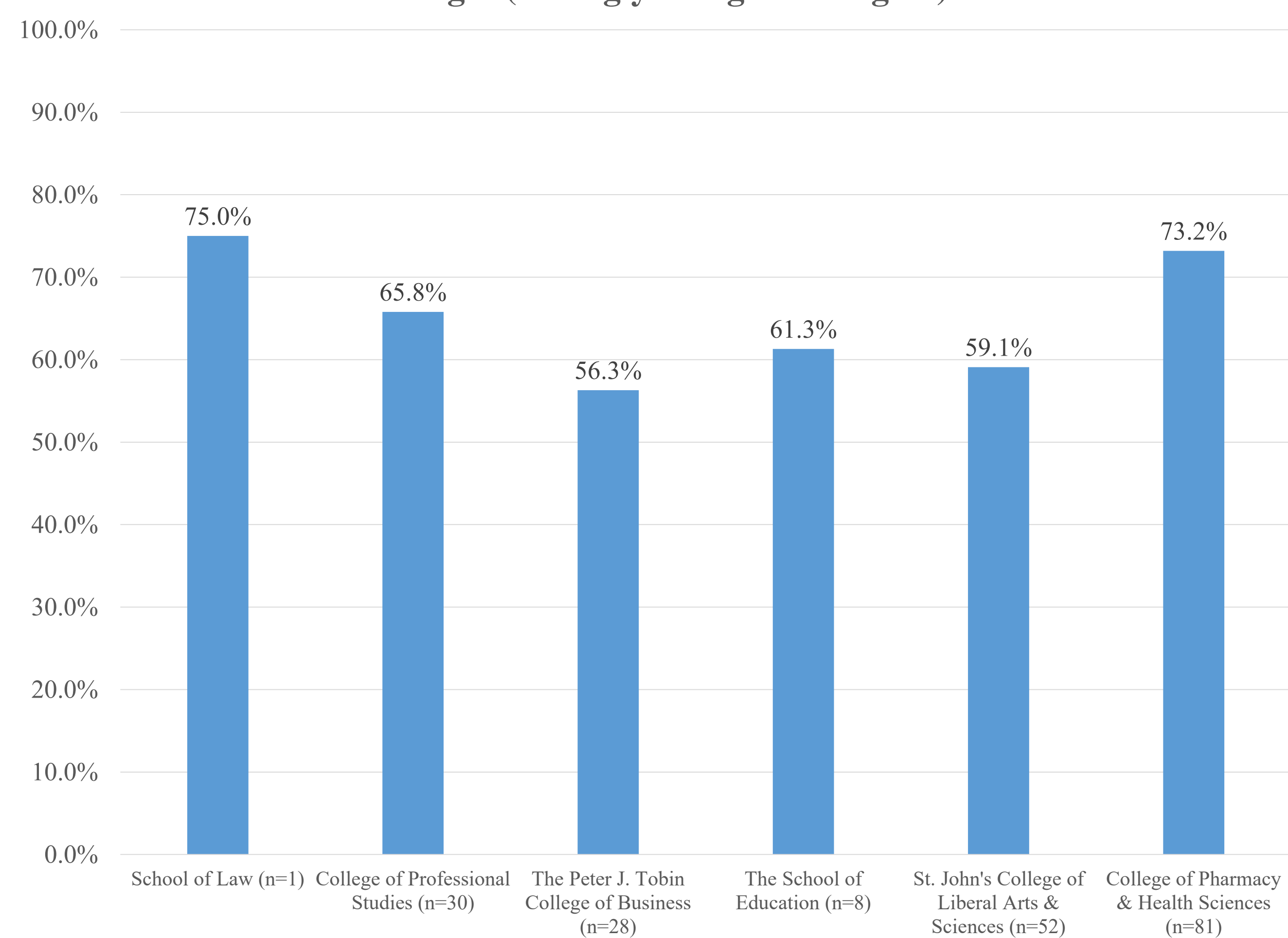


Table 1b. Breakdown of Ethnicities (n=200)		
Ethnicities	Actual #	Percentage (%)
White/Caucasian/Middle Eastern	55	27.5
Hispanic/Latino	28	14
Black/African American/Caribbean	34	17
Asian (including Indian subcontinent)	75	37.5
Mixed	4	2
Prefer Not to Say	4	2

Figure 2. Overall Results for Attitude on Antibiotic Use

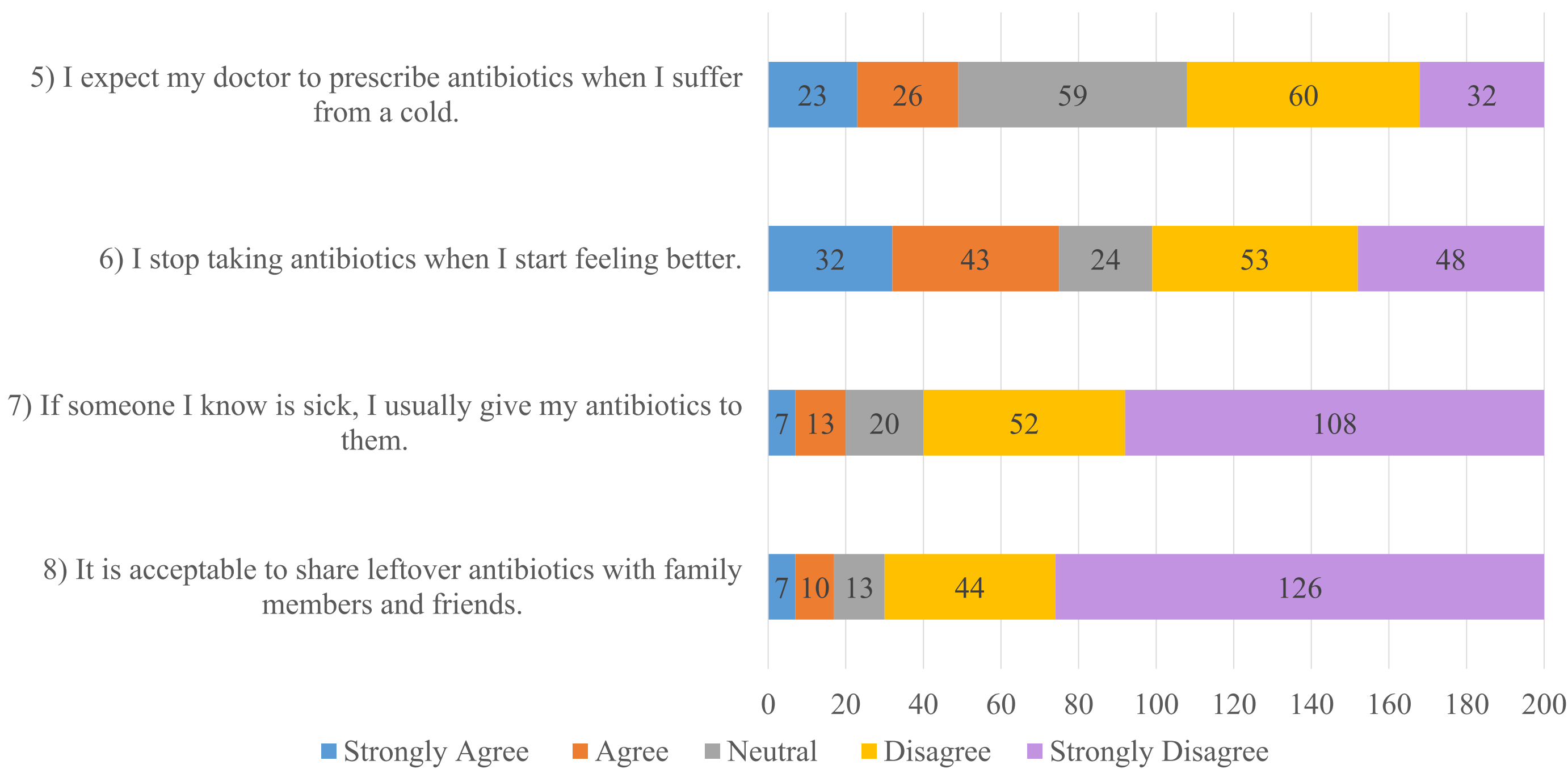


Figure 4. Overall Results for Knowledge on Antibiotic Use Based on Ethnicities

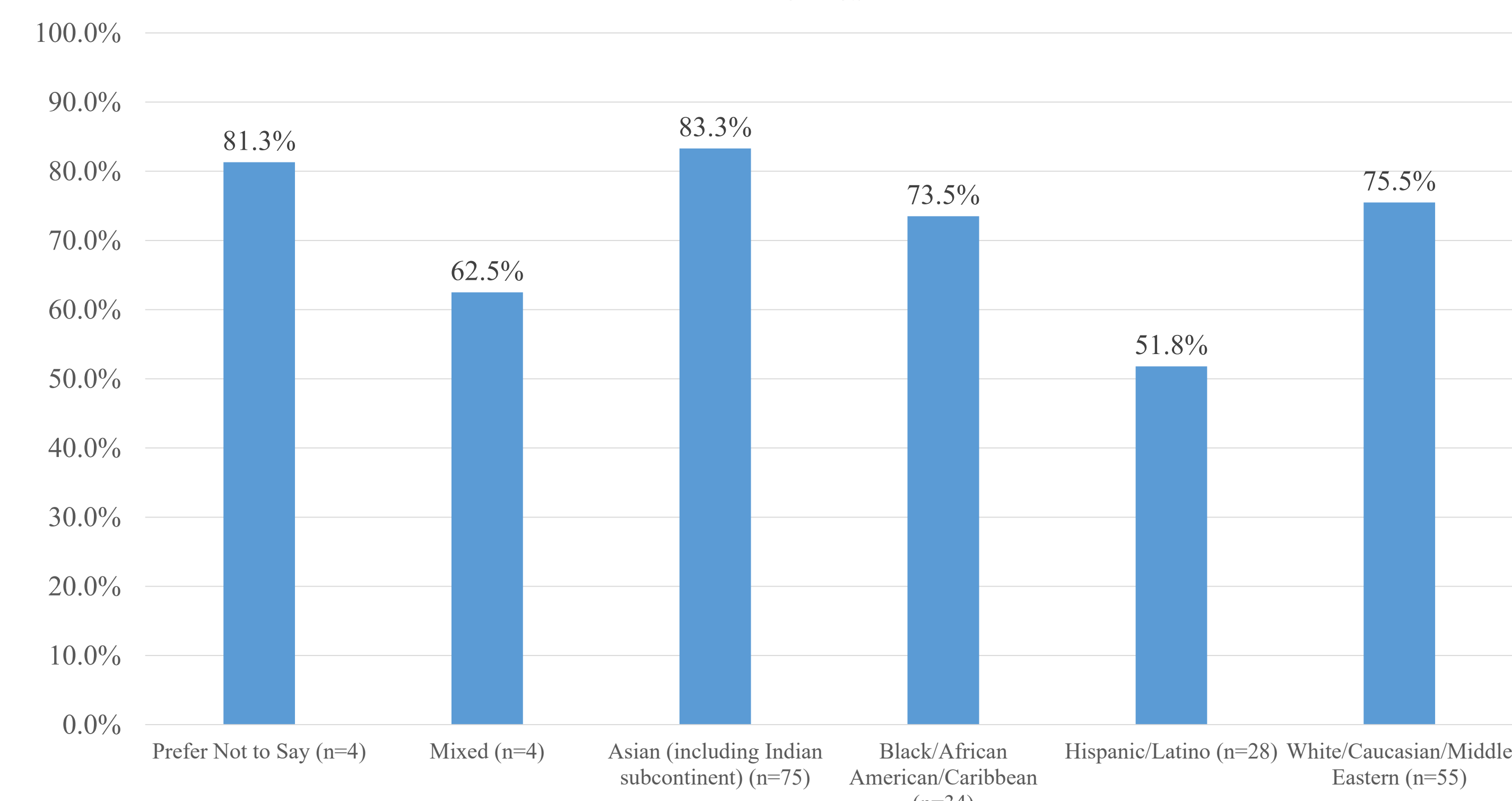
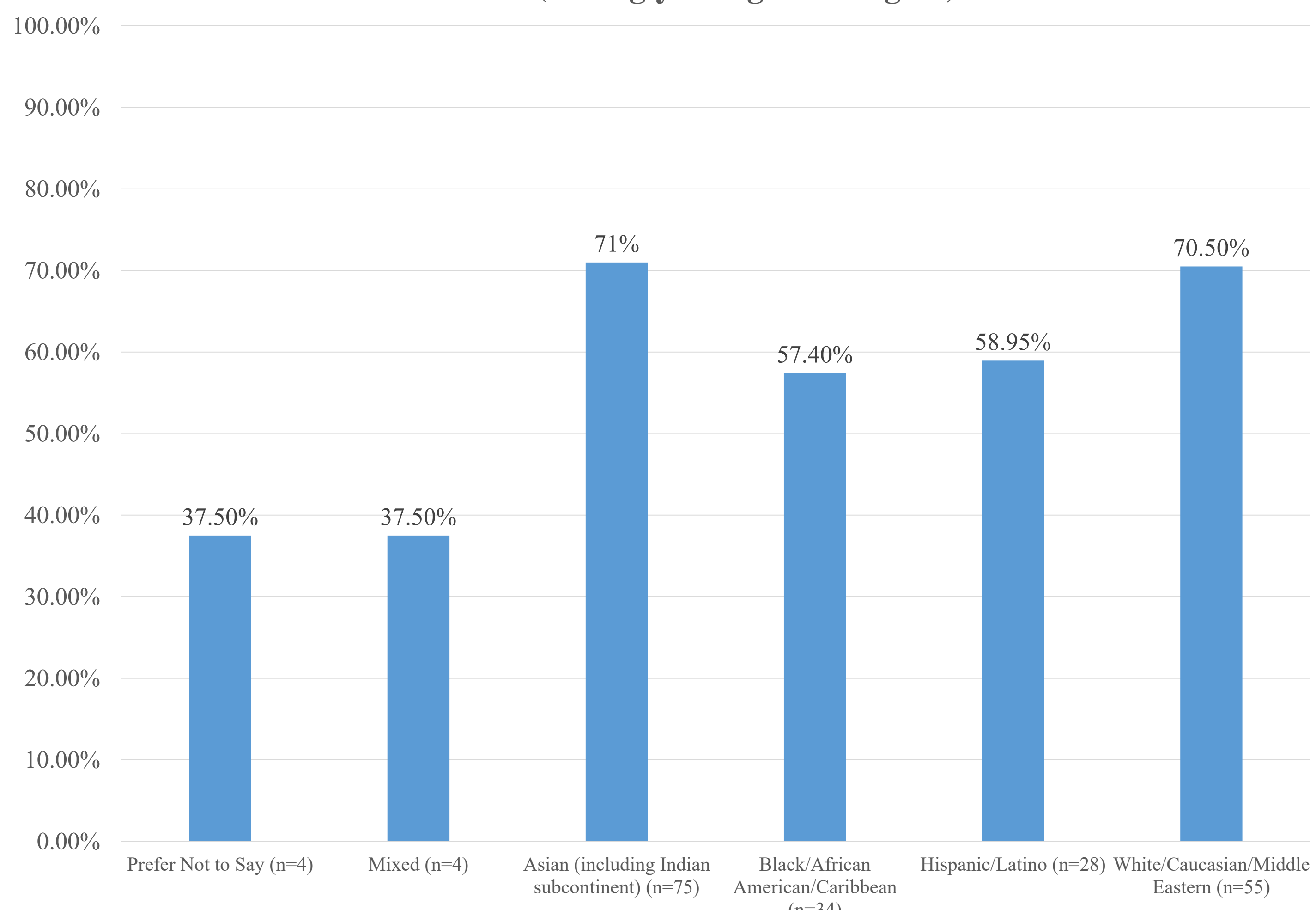


Figure 6. Overall Results for Attitude on Antibiotic Use Based on Ethnicities (Strongly Disagree/Disagree)



In regards to knowledge, the College of Pharmacy & Health Sciences scored the highest (84.6%) while the College of Professional Studies scored the lowest (58.3%). Asians/SE Asians scored the highest (83.33%) while Hispanics/Latinos scored the lowest (51.78%). In regards to attitude, students from the Peter J. Tobin College of Business (43.7%) and those of mixed ethnicities or 'preferred not to say' (62.5%) appeared more likely to inappropriately use antibiotics.

CONCLUSION

Survey results revealed a 24.9% deficit in knowledge and a 34.9% inappropriate attitude of antibiotic use amongst college students. These results were more prominent in non-health sciences related colleges and non-Asian ethnicities. Specific knowledge gaps include indications of antibiotics, when to expect antibiotic prescriptions from doctors, and adherence to antibiotics once prescribed.

This study suggests that education on the appropriate use of antibiotics geared towards college students is necessary in order to effectively combat antimicrobial resistance. Specifically at St. John's University, ideas for future education opportunities include campus-wide posters and online videos made available on the MySJU website to promote the appropriate use of antibiotics. Trivia events and health workshops can also be held during common hour or after-class hours for this cause. Social media can also be used to spread the awareness of antibiotic resistance. The College of Pharmacy and Health Sciences can coordinate interprofessional education activities within this purpose. These activities are all examples of antimicrobial stewardship at the community level, which can be implemented at all college campuses.

Limitations to this study include that our survey questions have not been validated, statistical analysis was not performed to demonstrate statistical significance, and the number of students per college and ethnicity was unevenly distributed.

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