

Evaluation of Patient Initiated Antibiotic Seeking Habits for Urinary Tract Infections (UTI) as a Result of Symptom Recognition and Over the Counter (OTC) Product Use

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Oregon State
University



Disclosure Statement

No conflicts to disclose



Background



Background

- Urinary tract infections (UTIs) are the most common outpatient infections in the United States
 - Bacterial infection commonly requiring antibiotics for treatment
 - Lifetime incidence of 50-60% in adult women
- Common symptoms of urinary tract infections:
 - Frequency and urgency of urination
 - Burning sensation when urinating
 - Pelvic pain/pressure
 - Small amounts of urine



A GROWING CRISIS WORLDWIDE

In the EUROPEAN UNION,
antibiotic resistance
causes 25,000 deaths per year
and 2.5m extra hospital days¹



In INDIA, over 58,000 babies died
in one year as a result of infection
with resistant bacteria usually
passed on from their mothers²



In THAILAND,
antibiotic resistance
causes 38,000+ deaths
per year and 3.2m hospital days³



In the UNITED STATES,
antibiotic resistance
causes 23,000+ deaths
per year and >2.0m illnesses⁴



Background

- Prior research suggest that patient preferences influence physician prescribing of antibiotics
- Increasing antibiotic resistance is a global health issue
 - Over-use of antibiotics is one contributing factor
- New policies and initiatives forged by the CDC, UN and WHO for reducing antimicrobial resistance.
- Unknown if UTI symptom recognition and use of newer OTC products influence patient preference
- Unnecessary use of antibiotics places patients at risk for side effects



Purpose

To compare antibiotic seeking habits among women with:

1. accurate vs. inaccurate symptom recognition
2. use vs. no use of over-the-counter urinary tract infection products



Study Methods



Study Methods

- REDCap created 31-item web-based survey
 - Evaluation period May 15, 2020- August 5, 2020
 - Constructed of discrete and open-ended questions
- Preexisting survey panel listserv (ResearchMatch.org)
 - Originally recruited to respond to surveys revolving around antibiotics and infections
 - \$20 gift card incentive was offered (20 participants selected from drawing of first 100 responders)
- Inclusion criteria:
 - Female
 - Respondents age ≥ 21 years
 - Consenting

 **researchmatch.org**

 **REDCap**
Research Electronic Data Capture



Study Methods

- Statistical analysis
 - Frequency of requesting behavior compared across predictors using the Chi-Square test via SAS
 - Symptom recognition
 - OTC product use

Symptom Recognition

Correct	Incorrect
<ul style="list-style-type: none">• Burning sensation when urinating• Persistent urge to urinate• Pelvic pain/pressure• Small amounts of urine	<ul style="list-style-type: none">• Smell• Appearance• Bloating
“All correct”	“Only correct”
All the symptoms + possibly other incorrect symptoms	Only the correct symptoms with no other identified symptoms



Study Methods

- Open-ended survey questions were coded for analysis by investigators using Microsoft Excel
- Medication or test advertised for use to treat, prevent or diagnosis UTI



Qualified OTC product

- Phenazopyridine
- UTI diagnostic strips (“Dip Stick”)
- Cranberry capsules or tablets

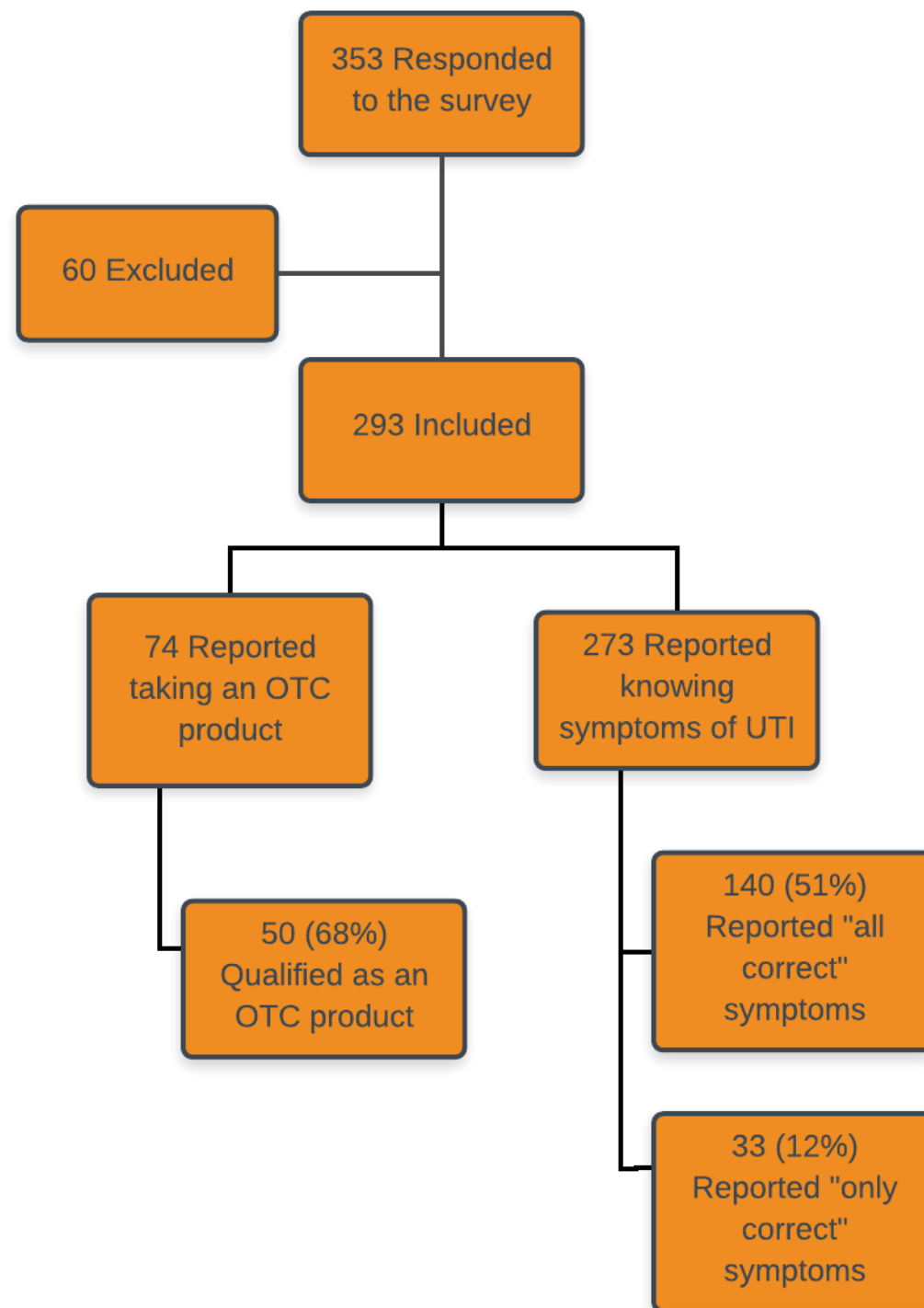
Unqualified OTC product

- Left-over antibiotics
- Home remedies
- Complementary medicine
- Products for yeast infections
- Unreported

Results



Results





Results: characteristics of cohort



Table 1. Characteristics of Study Population (N=293)

Age		(n/N)	%
	21-29	7/293	2
	30-39	59/293	20
	40-49	46/293	16
	50-59	52/293	18
	60+	129/293	44
Race⁺			
	White	263/290	91
	Black or African American	9/290	3
	Asian	4/290	2
	American Indian/Alaskan Native	1/290	0
	Other	10/290	4
Education			
	High school graduate or equivalent	5/291	2
	Some college credit	28/291	10
	Associate degree	16/291	5
	Bachelor's degree	99/291	34
	Master's degree	93/291	32
	Doctorate degree, non-healthcare	38/291	13
	Healthcare Professional degree	12/291	4
Sought medical care for suspected UTI			
	Yes	228/289	79
Doctor confirmed UTI for those that sought care			
	Yes	217/228	95
Asked for an antibiotic			
	Yes	59/214	28
+3 declined to respond			

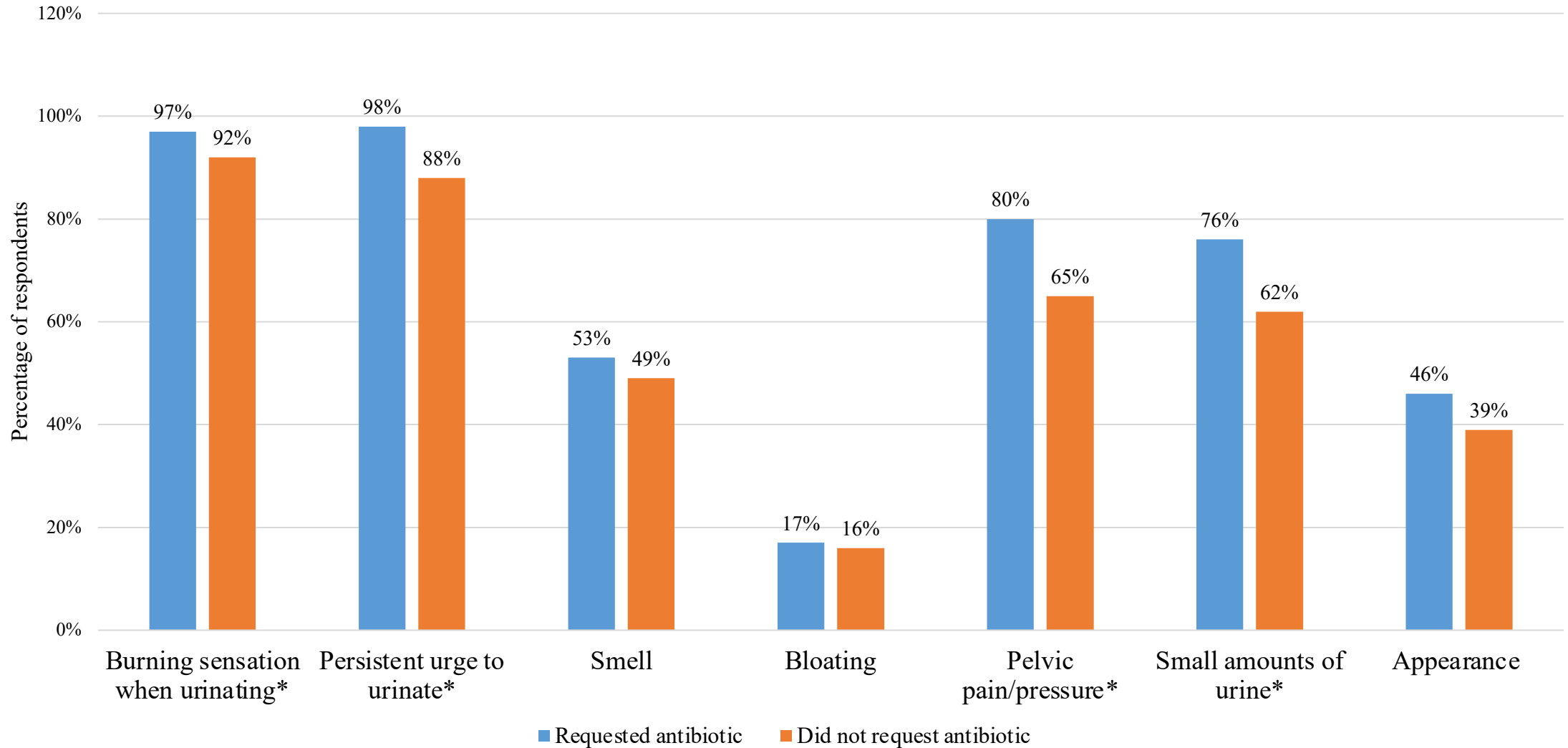
Results: symptom recognition of included respondents (n=293)

Symptom	n (%)
→ Burning sensation when urinating*	269 (92%)
→ Persistent urge to urinate*	257 (88%)
Smell	144 (49%)
Bloating	46 (16%)
→ Pelvic pain/pressure*	189 (65%)
→ Small amounts of urine*	181 (62%)
Appearance	115 (39%)

*correct symptom



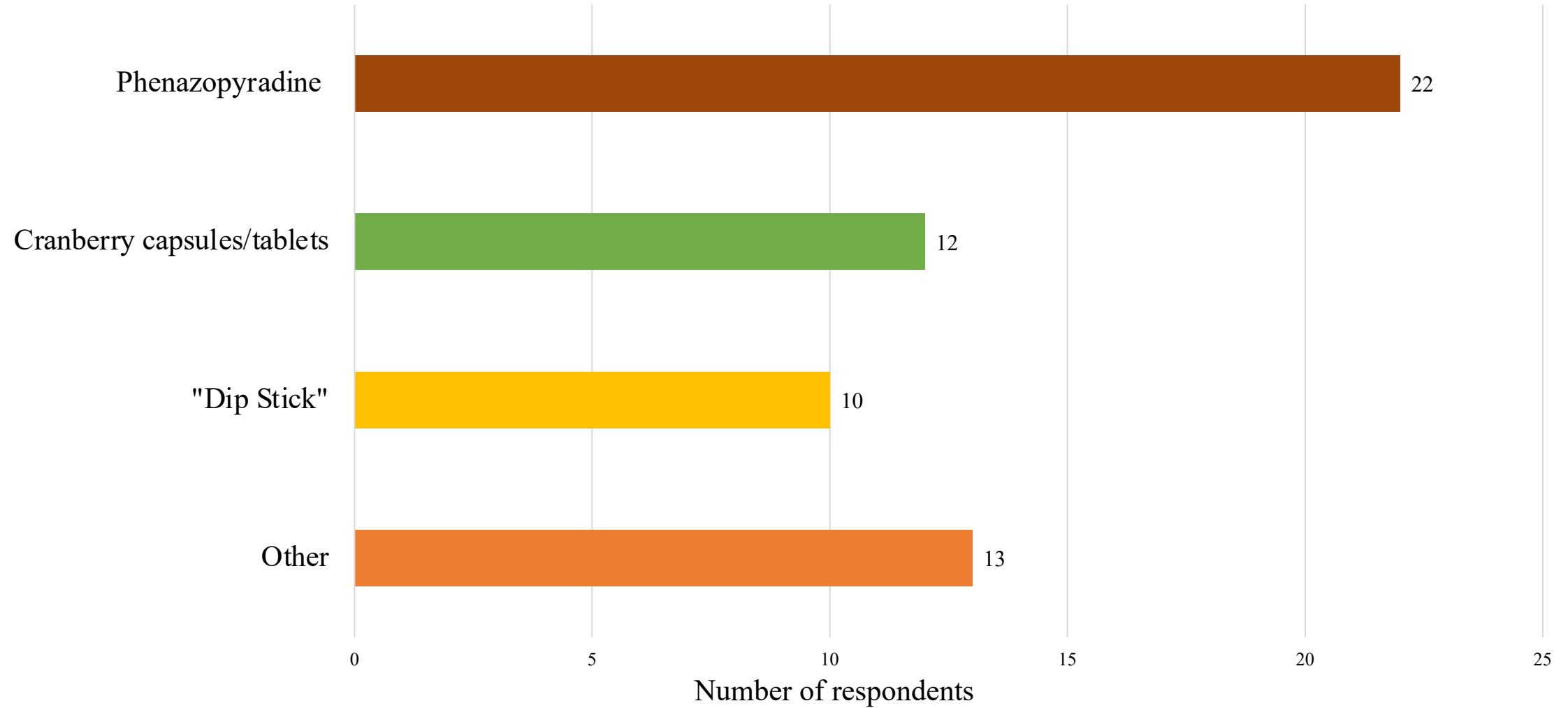
Results: symptom recognition stratified by requesting behavior (n=293)



*correct symptom



Results: common over-the-counter product types (n=74)

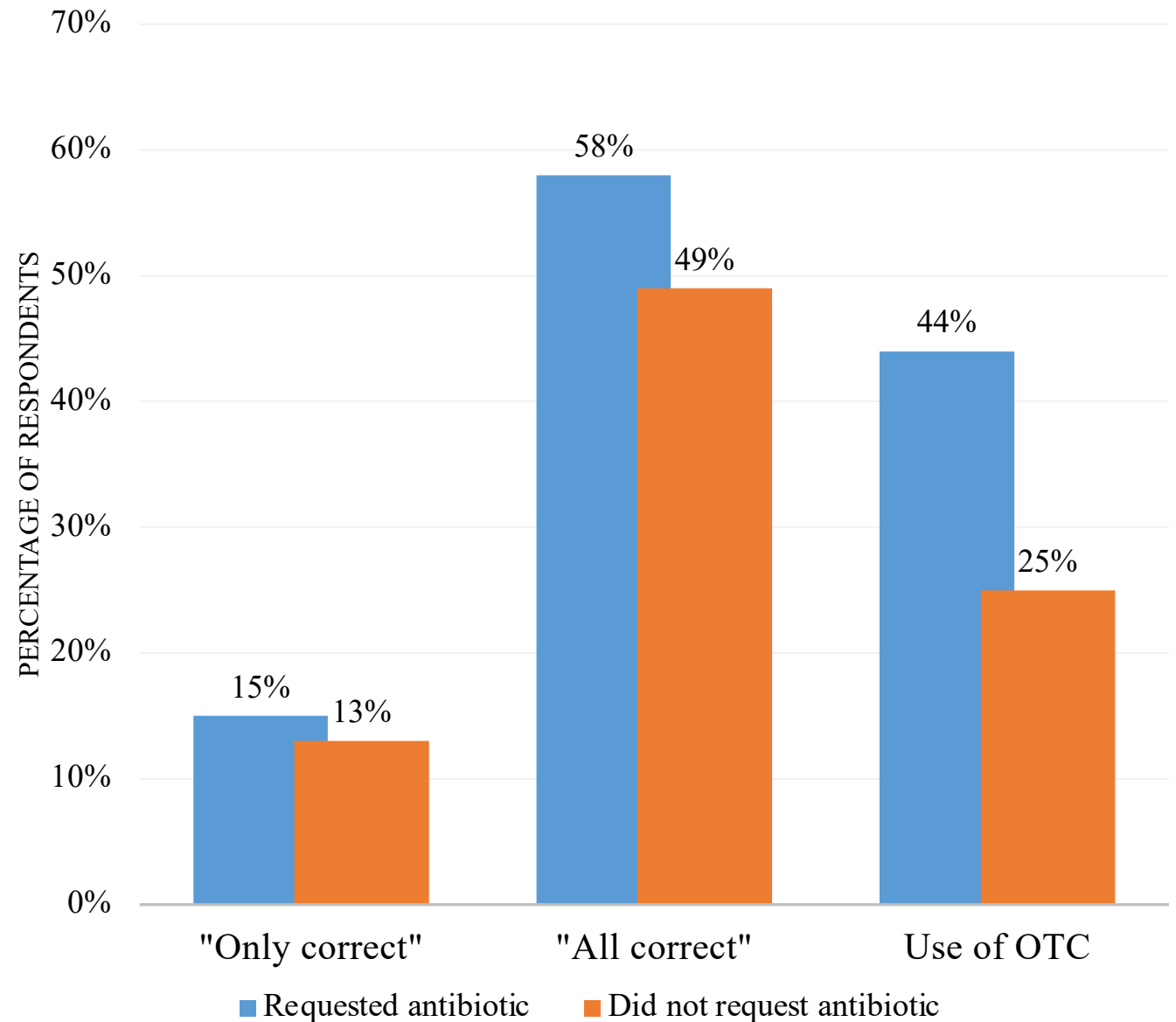


**Could have chosen more than one of these products



Results: symptom recognition and OTC use as predictors of antibiotic seeking behaviors

- Respondents that requested an antibiotic were more likely to use an OTC product (44% vs. 25%; $p=0.008$)
- Respondents that requested an antibiotic were **not** more likely to recognize correct symptoms (15% vs. 13%; $p=0.65$)





Conclusion



Conclusions



Symptom recognition may play a role in antibiotic seeking behaviors for UTIs



Use of OTC products did play a role in antibiotic seeking behaviors for UTIs



Strengths vs. weaknesses



Targeted education should focus on appropriate use of OTC products and symptom recognition most sensitive and specific for a UTI



Larger, more diverse population studies should be conducted in varying disease states



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