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Literacy-Sensitive Approach to Improving Antibiotic Understanding in a Community-Based Setting

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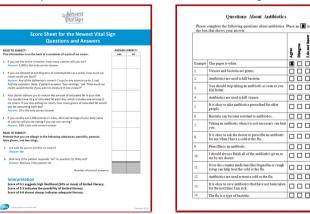


Background **Methods** This study was approved by the University of Oklahoma Health Antibiotic Usage Sciences Center Institutional Review Board Overuse and misuse of antibiotics contribute to antibiotic-Sample resistant bacterial infections¹ Over 2 million people develop severe antibiotic-resistant metropolitan area infections every year with 23,000 deaths and an estimated \$20 ≥ 18 years old billion in healthcare costs1-2 English-speaking 45% of patients responding to a telephone survey believed **Study Design** viruses could be treated using antibiotics³ Prospective, pre-test post-test study 47% of adults surveyed do not always take the full course of antibiotics4 of health literacy, were collected at baseline Patient Impact before and after the educational seminar Knowledge index constructed - summation of correct answers 46% of adults surveyed call their provider to ask for antibiotics when they have a cold or the flu⁴ Study Implementation Unnecessary antibiotics were prescribed 80% of the time when recruit participants some form of patient pressure was witnessed⁵ Participants completed: 46% of patients with URTIs who came to their physician · Brief demographic survey expecting an antibiotic received one; 29% who did not expect The Newest Vital Sign (NVS) health literacy survey an antibiotic received a prescription for one⁶ 14-item pre-test evaluation of current antibiotic knowledge 27% of prescriptions were written for treatment of illnesses for (randomized to 2/3 of participants - 19) which an antibiotic was not indicated⁷ All participants received: 30-minute educational PowerPoint presentation Role of Health Literacy 14-item post-test evaluation about antibiotic knowledge "...the degree to which an individual has the capacity to obtain. Newest Vital Sign communicate, process, and understand basic health e the following questions about antibiotics. Place an 🕱 i ore Sheet for the Newest Vital Sig information and services to make appropriate health Agree Disagree (do not] decisions"8 Given that approximately 36% of adult Americans were reported to have basic or below basic health literacy skills,9 literacy may play a role in antibiotic use No studies were identified relating health literacy to antibiotic knowledge or use 000 000

Specific Aims

- This study
 - Developed and deployed a program to enhance patient knowledge about antibiotic use
 - Evaluated whether providing patient education is associated with improvements in antibiotic knowledge
 - Explored the association between antibiotic knowledge and health literacy

- 28 eligible, community-dwelling participants from within the Tulsa, OK
- Participant sociodemographic characteristics, including a measurement
- Antibiotic knowledge (perceptions of appropriate use) were collected
- An informational flyer with scheduled program times was utilized to



Statistical Analysis

- Descriptive statistics were used to described the sample
- Wilcoxon signed rank tests and a dependent samples t-test were used to compare individual and cumulative pre/post antibiotic knowledge scores
- Pearson correlations were used to assess relationship between health literacy and pre-post antibiotic knowledge scores
- Kuder-Richardson 20 (KR20) was used to assess instrument reliability Stata 14.1© was used for analyses with a-priori alpha=0.05

Results

- 19 participants completed the seminar and both pre- and posttests
 - Overall antibiotic knowledge index significantly increased by 2 points (12.95 vs. 10.95, p=0.0011)
 - · Health literacy (NVS scores) was not significantly correlated with pre-test antibiotic knowledge scores (r=0.24, p=0.22), but was significantly correlated to post-test antibiotic knowledge scores (r=0.62, p=0.0004)
 - Test reliability was 0.79 and 0.70 for pre- and post-tests, respectively
- All participants
 - · Scored lower on subset statements reflecting treatment of viruses

Conclusion

- Patients have limited understanding of bacteria versus viruses and treatment
- Educational programs can improve antibiotic use knowledge
- The educational program may be more effective for those with higher literacy levels

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Disclosure Statement

Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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