4-17-2024

Education and its Effect on the Over Prescription of Antibiotics

Zackary Goswick
Pittsburg State University

The Need for Education on the Over Prescription of Antibiotics

Zackary Goswick, BSN Student
Irene Ransom Bradley School of Nursing, Pittsburg State University
Barb McClaskey, Ph.D. – Faculty

PICO Statement

P- Patients desiring antibiotics

I- Education on the proper use of antibiotics

C- Individuals with receiving antibiotics with limited knowledge as of why

O- Decreased prescription of unnecessary antibiotics

Abstract

The purpose of this research is to explore whether providing quality education on antibiotics will, in fact, help limit the number of multidrug resistant organisms (MDROs) infecting the current population. Far too often, antibiotics are prescribed to individuals who do not need them. This overuse causes antibiotics to lose their effectiveness as the human body builds up a tolerance with each subsequent use, thus creating "superbugs." These are organisms that have become unbeatable with the available antibiotics. Over prescription of antibiotics can happen for a myriad of reasons. One of the biggest being patients (frequently parents of pediatric patients) seeking treatment in an outpatient clinic demanding an antibiotic under the impression their sickness will certainly be cured. However, a plethora of organisms other than bacteria, such as viruses, can cause the population to succumb to illness. Unfortunately for these patients, an antimicrobial will not cure a virus. It will only cause issues later down the line in the event they develop a legitimate need for an antimicrobial. Too frequently, providers will comply with these requests and write a script for the aforementioned antibiotic. This denotes the need for education interventions to decrease the over prescription of antimicrobials that are causing MDROs.

Question

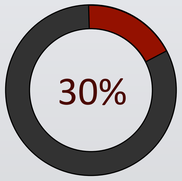
Regarding the prescription of antibiotics, what is the effect of educating the general population of proper antibiotic use on reducing the incidence of multidrug resistant organisms (MDROs)?

Purpose

The purpose of this research is to determine whether providing quality education on what antibiotics do will, in fact, help limit the number of super bugs infecting the current patient population.

Background Information

- As antibiotics continue to be taken, bacteria in the body will begin to build up a resistance creating the phenomenon known as superbugs.
- According to the CDC, at least 30% of antibiotics prescribed in outpatient settings are unnecessary.



- Patients will demand an antibiotic regardless of the cause of their illness, and providers often comply.

Interventions

- Provide education with methods geared toward the target audience.
  - Use a variety of methods to teach the public: for example, theater presentations for children were shown to provide surface level information.
- Use a the "One-Health" approach to educating. Education on this matter should not fall solely on nurses, but on provider, teachers, parents, etc. as well.
- Educate to take the course of antibiotics exactly as prescribed.
  - This ensures the bacteria have been thoroughly neutralized. Otherwise, some may survive, multiply, and cause an infection all over again.

Expected Outcomes

Through education interventions, the hope of this research is that the prevalence of antibiotic resistant superbugs will drop.

. The public will understand that more than just bacteria can cause one to become sick.
. Prescribers will think critically to ensure an antimicrobial is absolutely necessary.
. Patients and even parents of younger patients will stop requesting an antibiotic as soon they feel a sore throat coming on.

Gaps in the Literature

- Every study reviewed denoted the importance of education on antimicrobials.
- It seems the medical community is in agreement that more education is needed among the general public as well as prescribers. However, there does not seem to be any research as to how effective education efforts have been: just that there is a need for more education.

References

Adedeji W. A. (2016). THE treasure called antibiotics. Annals of Ibadan postgraduate medicine, 14(2),
56–57. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5354621/

Battu, T. S., Gundala, A., Martha, S., Rachuri, N., Ramachandran, P., & Shakthivel, R. (2019). Implications of overprescription of antibiotics: A cross-sectional study. Journal of pharmacy & Bioallied sciences, 11(Suppl 2), S434–S437. https://doi.org/10.4103/JPBS.JPBS_62_19

Centers for Disease Control. (2022, October 5). Measuring outpatient antibiotic prescribing. https://www.cdc.gov/antibiotic-use/data/outpatient-prescribing/index.html#:~:text=CDC%20estimates%20that%20at%20least,antibiotic%20was%20needed%20at%20all.&text=2-,Total%20inappropriate%20antibiotic%20use%2C%20inclusive%20of%20unnecessary%20use%20and%20inappropriate,of%20all%20outpatient%20antibiotic%20use.

Marvasi, M., Casillas, L., Vassallo, A., & Purchase, D. (2021). Educational activities for students and
citizens supporting the One-Health approach on antimicrobial Resistance. Antibiotics, 10(12), 15-19. https://doi.org/10.3390/antibiotics10121519

News in Health. (2012, Febuary). Stop the spread of superbugs. https://newsinhealth.nih.gov/2014/02/stop-spread-superbugs