Rough Draft Quantitative Research Critique and Ethical Considerations

Clostridium difficile infection

NRS – 433V

Introduction to Nursing Research

Institution

Professor:

Student name

Date

Introduction

In “Vital signs: preventing Clostridium difficile infections,” CDC (2012) presents a quantitative study aimed at examining both hospital-based and non-hospital sources of exposure for Clostridium difficile infection (CDI). In the article, too, CDC examine the effectiveness of Emerging Infections Program on the infection of CDI and control. The article makes various recommendations that if implemented, can greatly reduce the rate of infection of C. difficile. Additionally, the article summarizes CDI from a public health perspective, and it does well to show how and why the disease is such a big problem to the country. A critical analysis of the disease is also given. For example, the article defines Clostridium difficile as a bacillus which respires anaerobically and forms spores. The bacillus is responsible for causing pseudomembranous colitis, a medical condition which often manifests as diarrhea. This condition can occur repeatedly, and if it is not detected and treated in time, it can persist and develop into serious conditions that can cause death. The spores are the infective properties, and they can survive on surfaces for a long time. According to the article, CDI often spread in healthcare settings as a result of the concentration of symptomatic patients and the prescription of antibiotics.

Background of study

The medical costs, incidence, and mortality rates of CDI have been increasing tremendously throughout the past few years. For example, in the 1999/2000 period, there were about 3,000 deaths attributed to CDI. In the 2006/7 period, the number stood at 14,000. This increase in the number of deaths is alarming particularly in light of the suffering that it causes. What is more worrying is the fact that many of the people positively diagnosed with CDI report to have had contact with clinical settings at some point. Many of them, too, had their onset once they cut the contact with the clinical setting. This raises concerns about the role of clinical settings to play in the transmission of the infection.

The cost of hospitalization for CDIs has more than tripled over the years. For every case, it is estimated that it costs somewhere between $5,042 and $7,179 to treat a patient. Every year, the nation spends between $897 million and $1.3 billion on CDI (Dubberke et al., 2008). Between 2000 and 2009, the number of patients hospitalized with CDI increased from 139,000 to 336,600, and this can explain why the medical costs have been increasing. It, therefore, follows that this matter requires urgent attention in terms of understanding the underlying factors that cause the upsurge. The purpose of the study, therefore, is to develop an understanding of the relationship between the clinical settings and CDI infection which will assist in developing clinical-based interventions to control the spread of the infection in these settings. Possible research questions would include:

1. Is the healthcare setting designed to control the spread of CDI?
2. Is there a difference between infections in healthcare settings and those outside healthcare settings?

Method of study

 The study employs quantitative techniques. The article uses three sources of data to:

* Identify the exposures of CDIs in healthcare settings,
* Establish the number of cases of CDI that occur outside healthcare settings, and to
* Evaluate the effectiveness of interventions in reducing CDIs

 Active surveillance based on populations was conducted by the Emerging Infections Program of CDC in eight different geographical areas. Catchment areas were defined, and program coordinators were supplied with lab reports on stools that tested positive for the bacillus. Cases to be included in the study were defined based on a person having a positive test at that time but did not test positive in the previous 8 weeks. The medical records of participants were looked into to confirm that they indeed exhibited symptoms of CDI. Also, there records revealed all the exposures participants had to healthcare settings in the past 12 weeks before the specimen was collected.

 Data was also collected from the National Healthcare Safety Network (NHSN), and data relating to patients who tested positive for CDI after exposure to healthcare setting was given priority. Specifically, the specimen was collected and tested for the bacillus within three days of admission to healthcare settings and also taken and tested again 4 weeks after being discharged. This is because it is during this period that hospitalization is likely to increase the risk of or explain DCI infection. The final source of data was based on three programs lead by Illinois, Massachusetts, and New York state governments to prevent the prevalence of hospital-exposure infections with a specific focus on CDI. There were a total of 71 hospitals that were included in these programs.

Results of study

 According to CDC’s Emerging Infections Program, a total of 310 nursing homes and 111 acute care facilities were included in the surveillance. The number of CDI cases that were identified stood at 10,342. Of this number, 44% was made up of patients of 65 years and above. 94% of all these cases were related to some kind of exposure to healthcare facilities. Of all the cases that were related to exposure to healthcare settings, 75% developed symptoms long after their discharge from these facilities. There were also cases that were related to exposure to nursing homes and acute healthcare facilities. According to NHSN data, there were 42,157 cases of CDI and 52% of them are people presently admitted in various hospitals.

Ethical considerations

 Ethical considerations refer to attempts made to demonstrate respect for human subjects' dignity and their rights even as they assist in the research process (Burns & Grove, 2010).  It involves issues like protecting the identities and privacy of research subjects, getting approval from relevant authorities to conduct the study, and obtaining the consent of the research subjects. In this study, there is no provision for such. This may be due to the fact that the study is conducted by a reputable organization which is involved in the healthcare system. Whatever the case, the study should have included information on such basic research ethics.

Conclusion

 In conclusion, healthcare settings make up part of the risk factors for increased transmission and infection of CDI. Specifically, the concentration of people with symptoms in these settings and the uncontrolled administration of antibiotics contribute to the spread of the disease. There is a need, therefore, to strengthen the monitoring of antibiotics in these settings as well as strict diagnosis of every patient before admission. There should be systems in place to quickly detect and isolate patients with symptoms.

References

Burns, N., & Grove, S. K. (2010). Understanding Nursing Research-eBook: Building an Evidence-Based Practice. Elsevier Health Sciences.

Centers for Disease Control and Prevention (CDC. (2012). Vital signs: preventing Clostridium difficile infections. *MMWR. Morbidity and mortality weekly report*, *61*(9), 157.

Dubberke, E. R., Reske, K. A., Olsen, M. A., McDonald, L. C., & Fraser, V. J. (2008). Short-and long-term attributable costs of Clostridium difficile-associated disease in nonsurgical inpatients. *Clinical Infectious Diseases*, *46*(4), 497-504.