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Survival analysis: A tool for the epidemiological study of in-hospital patients in the intensive care unit

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Background: Statisticians and healthcare practitioners rely on information based on data, to generate indices that best present situations, progress and areas of need. Ability to understand the process is key into inequities, understanding the underlying causes and gaining insights into the mechanisms that link conditions to relevant outcomes. Though the event 'outcome' is of importance in medicine, sometimes the time to such is unknown; when at the end of a study, some subjects have not had the event of interest and what is known on a subject is that it survived to time (t), then many other statistical methods of analysis become inappropriate. Also, many data are rarely normally distributed but skewed and violate the assumptions of another statistical method of analysis, these are typical survival data.

Objectives: (a) To describe the survival times of patients with fungal infection and those without. (b) To compare time-to-death between patients with fungal infection and those without.

Methods: The current paper provided an overview of survival analysis in epidemiological studies. With a view to comparing survival among patients in a case study, Kaplan Meier survival curve displayed the time to death of patients, how it compared fungal infection status and Log-rank tested for statistical group difference on the survival times of (1042) in-hospital patients.

Results: Kaplan-Meier survival curve showed a significant difference in mortality between those with and without fungal infection. Cumulative survival proportion appeared to be much higher among patients without fungal infection compared to those infected.

Conclusions: Though the prevalence of fungal infection was low in the study, there was significantly higher in-hospital death, fungally infected patients spent long days on admission than those without. To improve the outcomes of patients in this population, more attention to health care should be paid to those diagnosed with fungal infection receiving intensive care.

Biography

Oluwakemi Rachel Ajayi is a Postdoctoral researcher at the University of KwaZulu-Natal Medical School. She had her PhD (Statistics) from the University of KwaZulu-Natal, research focused on cognitive development in children, aged 4-8 years living in KwaZulu-Natal, South Africa. Her MSc and BSc (Statistics) from the University of Lagos and Ilorin respectively. She has taught statistics to university undergraduate students, invigilated tests and exams checked and collated exam scores/reports. She is a member of European Academy of Allergy and Clinical Immunology, a Chartered Member of Management and Biometrics and Statistical Sciences Facilitation, she has served in the position of a Biostatistician, Data analyst and Consulting Statistician. She has published papers in reputed journals while there are some others under review and has been serving as an editorial board member of repute.

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