Case study

PanAfrican Medical Journal

Binary logistic regression analysis of the association between body mass index and glycemic control in patients with type 2 diabetes mellitus: a teaching-case study

Yousef Khader[1,&]

[1]Department of Public Health, Jordan University of Science and Technology, The Eastern Mediterranean Public Health Network (EMPHNET), Jordan

[&]Corresponding author:
Yousef Khader, Department of Public Health, Jordan University of Science and Technology, The Eastern Mediterranean Public Health Network (EMPHNET), Jordan

Corresponding author: Yousef Khader, Department of Public Health, Jordan University of Science and Technology, The Eastern Mediterranean Public Health Network (EMPHNET), Jordan (yskhader@just.edu.jo)

Abstract

Type 2 diabetes mellitus (T2DM) is an increasing global health problem in both developed and developing countries, including Arab countries. The goal of T2DM management is to delay the onset of complications associated with the disease and impede disease progression; this is achieved mainly through glycemic control. Unfortunately, glycemic control remains poor, ranging between 40% and 60% worldwide. This case study demonstrates the practical application of basic and advanced statistical techniques to analyze the association between independent and dependent variables. This case study is designed for the training of basic level field epidemiology trainees or any other health care workers working in public health-related fields. It can be administered in 5-7 hours in class or as a take-home exercise.

How to use this case study

General instructions: this case study should be used as adjunct training material for novice epidemiology trainees to reinforce the concepts taught in prior lectures. The case study is ideally taught by a facilitator in groups of about 20 participants. It can be administered as a take-home assignment or part of an examination assignment. This assignment require analysis and writing from the student.

Audience: this case study was developed for novice field epidemiology students. These participants are commonly health care workers working in the county departments of health whose background may be as medical doctors, nurses who work in public health-related fields. Most have a health science or medical statistics background is preferred.

Prerequisites: before using this case study, participants should have received lectures on survival analysis.

Materials needed: Flash drive, flip charts, markers, computers, SPSS software

Time required: 5-7 hours

Language: English

Case study material

- Download the case study student guide
- Request the case study facilitator guide

Competing interest

The authors declare no competing interests.

Acknowledgement

Annexe

Annex 1: SPSS logistic regression

References

1. Stratton IM, Adler AI, Neil HA, Matthews DR, Manley SE, Cull CA, Hadden D, Turner RC, Holman RR. Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): prospective observational study. Bmj. 2000 Aug 12;321(7258):405-12.
2. Field AE, Coakley EH, Must A et al. Impact of overweight on the risk of developing common chronic diseases during a 10-year period. Arch Intern Med. 2001 Jul 9;161(13):1581-6.
3. Chan JM, Rimm EB, Colditz GA, Stampfer MJ, Willett WC. Obesity, fat distribution, and weight gain as risk factors for clinical diabetes in men. Diabetes Care. 1994 Sep;17(9):961-9.
4. Colditz GA, Willett WC, Rotnitzky A, Manson JE. Weight gain as a risk factor for clinical diabetes mellitus in women. Ann Intern Med. 1995 Apr 1;122(7):481-6.
5. Wannamethee SG, Shaper AG. Weight change and duration of overweight and obesity in the incidence of type 2 diabetes. Diabetes Care. 1999 Aug;22(8):1266-72.
6. World Health Organization. Obesity: preventing and managing the global epidemic. World Health Organization; 2000.

PAMJ is an Open Access Journal published in partnership with the African Field Epidemiology Network (AFENET)