

## Case study



# 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

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**Key words:** Independent t-test, chi-square test, logistics regression, glycemic control

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## 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.

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## Annexe

**Annex 1:** SPSS logistic regression

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