Cellular Aspects of Diabetes Mellitus: a ludic educational approach for High School students

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INTRODUCTION. Diabetes mellitus (DM) is a metabolic disorder which affects thousands of people worldwide at increasingly early age. It is known as a chronic noncommunicable disease (NCD), of slow, severe and progressive evolution, requiring intensive treatment and appropriate supervision. It shows high prevalence among young people. Causes of diabetes mellitus are commonly associated to inadequate food consumption and sedentary lifestyle, genetic predisposition and cellular alterations.

OBJECTIVE: the study aimed at developing the knowledge of how this disease originates in the cells by means of ludic classroom activities designed for High School students.

MATERIAL AND METHODS: a questionnaire was initially applied to verify the students' previous knowledge of the disease. Terminology associated to cells and diabetes was selected and used in a teaching approach which was simple and adequate to the students' level of understanding. Didactic sequences included models made with EVA (ethylene vinyl acetate) to simulate enterocytes and the beta cells of the pancreas, presentation of an anatomic doll to promote understanding of the digestion process and absorption of nutrients, participatory theater using a giant cell to simulate insulin-regulated mechanisms, a myth and fact game, and a kitchen set. The class ended with a second questionnaire to evaluate student satisfaction toward the methodology.

RESULTS AND DISCUSSION: the use of a ludic pedagogical approach to demonstrate the cell origin of the disease motivated student voluntary participation, and provided perception of their lack of information on the biology of diabetes mellitus. Data show that the ludic pedagogical approach facilitated understanding of certain topics in Biology and the disease itself.

Key Words: Biochemistry, diabetes mellitus, ludicity.

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