

CMED 305 Course

Practical Exercise on : How to write study methods of a research study

The methods section should provide detailed information on the research design, participants, equipment, materials, variables, and actions taken by the participants. The method section should provide enough information to allow other researchers to thoroughly understand the experiment or study. The method section may be divided into subheading or subsections. These subsections typically include: Participants, Materials, Design, and Procedure.

1. **Participants:** Describe the participants of the study/ experiment, including who they were, how many there were, and how they were selected.

For example: The study recruited randomly selected 100 children, aged ten to twelve years from schools.

2. **Design:** Describe the type of design used in the experiment. Specify the variables as well as the levels of these variables.

For example: A cross sectional study design was used to fulfill the objective of the study.

3. **Materials:** Describe the materials, measures, equipment used in the study/experiment. This may include testing instruments, technical equipments, books, images, or other materials used in the course of research.

For example: Fasting plasma glucose (FPG) values were obtained from 1,780 (86.8%) after fasting 8 to 24 h. These individuals then underwent an OGTT (2), consisting of a 75-g glucose-equivalent oral glucose challenge (Trutol) and a blood sample draw 2 h (15 min) later. The 2-h glucose value was obtained for 1,508 individuals (91.5% of those eligible for the OGTT)

4. **Definition of diseases under study:** the diseases under study or the diagnostic criteria according to standardized procedures must be clearly defined in methods.

Example : Our criteria for hypertension included the following: 1) systolic blood pressure 140 mmHg, 2) diastolic blood pressure 90 mmHg, and 3) taking medication for hypertension. Those who met any of these criteria at the 1998 examination were defined as having hypertension.

5. **Procedure:** The next part of method section should detail the procedures used in your experiment. Explain what you had participants do, how you collected data, and the order in which steps occurred.

For example:

An investigator interviewed children individually at their school in one session that lasted 20 minutes on average. The investigator then measured the height and weight measurements of the children to calculate the body mass index for determination of overweight .

6. **Data analysis can be briefly described**

A database was constructed with the Microsoft Excel 2005 and Statistical analysis was performed with the SPSS software. Mean, SD, and the range of variables were calculated by the univariate procedure. Stepwise logistic regression analysis was used to adjust multiple variables for the estimation of the potential risk factors for diabetes.

Guidelines:

1. Always write the method section in the past tense.
2. Provide enough detail that another researcher could easily understand the study.
3. Take a rough draft of method section and compare with high indexed journal write up.
4. Proofread the paper for typos, grammar problems, and spelling errors. Always read through each section of the paper for agreement with other sections.

The students are requested to read the published article and discuss in the practical session.

High prevalence of overweight and obesity among a representative sample of Puerto Rican children

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Methods

Study and sample design

The present study was an island-wide cross-sectional study designed to examine oral health status of 12-year-olds residing in PR. Although boys and girls aged 12 are at a different pubertal stage, the World Health Organization recommends this age group to establish international oral health comparisons, which was the primary goal of this investigation. The sample design allows the inference for the population of all 12 year-olds enrolled in school during the study period (November 2010 to May 2011). According to the PR General Council on Education and the Department of Education, there were 51,376 (40,081 in public and 11,295 in private schools) 12-year-olds enrolled in school. Public and private schools, serving fifth to seven graders in PR during the study period, were used as the target sample.

Sample selection

A probabilistic sample of 133 schools was selected from a total of 1,843 schools (1,343 public and 500 private schools). The sample is proportional to enrollment size, and stratified by the 11 health administrative regions (as determined by “Reforma”, the PR government’s health insurance program in 1997) type of school (public and private), and gender. Ten boys and ten girls were randomly selected from each school using the official student lists provided by the school’s administration. The required sample size was 2,600 children. A total of 1,734 children were contacted and invited to participate, however, some of the selected schools were inactive and others had merged. One hundred-fifty two (152) children were excluded due to school absences and failure to obtain their parent’s written consent.

Inclusion/exclusion criteria

The inclusion criteria: 12-years-of-age at the time of recruitment; healthy (no history of medical problems that contraindicate their participation in the study). The exclusion criteria: not competent to give their consent or unable to withstand a clinical procedure.

Parents or guardians signed a written informed consent and children provided written assent approved by the Institutional Review Board of the Medical Sciences Campus of the University of PR.

Socio-demographics and anthropometric measurements

Socio-demographic data was obtained from a self-reported medical history questionnaire answered by the legal guardian. In PR, public/private school attendance may be considered a surrogate measure for the family's socioeconomic status, which was confirmed in a subset sample. In addition, it has been reported that over 86% of the students attending public school in PR are socio-economically disadvantaged thus the type of school attended was interpreted as a proxy of the participant's socio-economic status. Trained staff measured children's height and weight following the NHANES III procedures. Height was measured in meters using a portable stadiometer (Seca Corporation, Hanover, MD) and weight was measured in kilograms using a Body Composition Analyzer (TBF-310A, Tanita Corporation of America, Arlington Heights, IL), calibrated prior to each use. These anthropometric measurements were made while the children were wearing their uniforms (without socks, shoes, and accessories). Body Mass Index (BMI) was calculated using the following formula: $\text{weight (kg)}/\text{height (m)}^2$.

Children were categorized as underweight, healthy weight, overweight, or obese using the Center for Disease Control and Prevention's age and gender specific growth charts, as follows: underweight (BMI <5th percentile), healthy weight (BMI between the 5th percentile and <85th percentile), overweight (BMI between >85th percentile and <95th percentile), and obese (BMI > 95th percentile) for children of the same age and gender.

Statistical analysis

The overall estimated prevalence and prevalence odd ratios (*POR*) for the different BMI categories were calculated. The overall estimated prevalences were also calculated by socio-demographic variables (gender and type of school) and their interactions for each weight category were estimated using a logistic regression model. A probability value of 0.05 was considered statistically significant.

Pl note: the methods section maybe formatted according to journal guidelines while preparing for research paper publication.

If time permits one student can represent the group and discuss the method section of their current study proposal.