

STATISTICS IN NURSING RESEARCH: AN OVERVIEW

By: Benjie G. Arias

Objectives

At the end of the session, you should be able to:

1. Identify common statistical tools in nursing research;
2. Choose the appropriate statistical tools in the your respective research paper.

To understand God's thoughts we must study statistics, for these are the measure of His purpose.

— Florence Nightingale

To behold is to look beyond the fact; to observe, to go beyond the observation. Look at the world of people, and you will be overwhelmed by what you see. But select from that mass of humanity a well- chosen few, and observe them with insight, and they will tell you more than all the multitudes together.

— Paul D. Leedy

From his book, "Practical Research," 1993

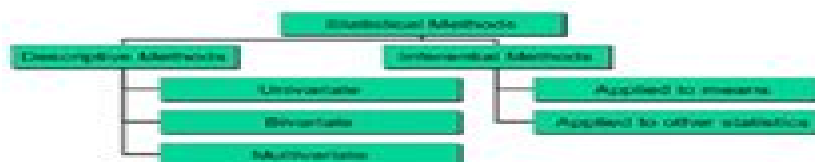
Choosing the Appropriate Statistic

Some factors to consider:

- Research design
- Number of groups
- Number of variables
- Level of measurement (nominal, ordinal, interval/ratio)

STATISTICAL METHODS

Statistical Methods



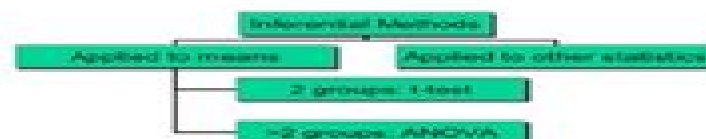
DESCRIPTIVE STATISTICS

Descriptive Statistics



INFERENTIAL STATISTICS

Inferential Statistics



While the individual man is an insoluble puzzle, in the aggregate he becomes a mathematical certainty. You can, for example, never foretell what any one man will be up to, but you can say with precision what an average number will be up to. Individuals vary, but percentages remain constant. So says the statistician.

— Arthur Conan Doyle

Types of Statistics

- **Descriptive statistics** characterize the attributes of a set of measurements. Used to summarize data, to explore patterns of variation, and describe changes over time.
- **Inferential statistics** are designed to allow inference from a statistic measured on sample of cases to a population parameter. Used to test hypotheses about the population as a whole.

Multivariate Statistics For Nursing Research

Denise Polit, Cheryl Beck



Multivariate Statistics For Nursing Research:

Multivariate Statistics for Nursing Research Beverly J. Volicer, 1984 *Understanding Nursing Research* Carol Leslie Macnee, Susan McCabe (RN.), 2008 This textbook explicitly links understanding of nursing research with evidence based practice and focuses on how to read critique and utilize research reports Organized around questions students have when reading reports how the conclusions were reached what types of patients the conclusions apply to how the study was done and why it was done that way the text explains the steps of the research process to answer these questions Chapters include clinical vignettes highlighted key concepts and out of class exercises Appendices present a variety of research examples This edition includes significant new material on evidence based practice and more distinction between qualitative and quantitative research Statistics and Data Analysis for Nursing Research Denise F. Polit, 2013-10-03 The second edition of *Statistics and Data Analysis for Nursing* uses a conversational style to teach students how to use statistical methods and procedures to analyse research findings Students are guided through the complete analysis process from performing a statistical analysis to the rationale behind doing so In addition management of data including how and why to recode variables for analysis how to clean data and how to work around missing data is discussed The full text downloaded to your computer With eBooks you can search for key concepts words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf available as a free download available online and also via the iPad and Android apps Upon purchase you ll gain instant access to this eBook Time limit The eBooks products do not have an expiry date You will continue to access your digital ebook products whilst you have your Bookshelf installed **Fundamentals of Nursing Research** Dorothy Young Brockopp, Marie T. Hastings-Tolsma, 2003 This book is written to inspire enthusiasm among nursing students toward the research process Concepts are presented in a unique worktext format which makes it easier for students to understand and simplify the principles of research **Canadian Essentials of Nursing Research** Joanne Profetto-McGrath, Denise F. Polit, Cheryl Tatano Beck, 2010-01-01 Completely revised With timely content and state of the art research undertaken by Canadian nurse researchers the Third Edition of this trusted resource provides the guidance you need to effectively critique every aspect of nursing research and apply the results to clinical practice *Canadian Essentials of Nursing Research* uses clear straightforward language and a user friendly presentation to help you understand retain and apply fundamental concepts with ease Book Jacket **Essentials of Nursing Research** Denise F. Polit, Cheryl Tatano Beck, 2010 *Essentials of Nursing Research* is designed to teach students how to read understand analyze and evaluate research reports in nursing practice The Seventh Edition has been updated with stronger coverage of evidence based practice including content on how to read interpret and critique systematic reviews which are considered by many to be a cornerstone of evidence based practice Also included in the Seventh Edition a more balanced presentation of medical and social science methods and nomenclature

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Nursing Research Denise F. Polit, Cheryl Tatano Beck, 2008
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Data Analysis & Statistics for Nursing Research Denise F. Polit, 1996 Introductory text covers the statistical methods and procedures needed to analyze research findings Special focus is given to quantitative methods Other features include management of data how to clean data and how to work around missing data Graduate nursing students

[Nursing Research](#) Denise Polit, Cheryl Beck, 2019-12-09 Make nursing research approachable with the authoritative resource for nursing graduate students This best selling text features the latest methodologic innovations in nursing medicine and the social sciences delivered in a user friendly writing style to help students master research methods confidently critique research reports and apply evidence based findings in clinical practice The extensively revised 11th Edition retains the helpful features pedagogy and clean design that have made the book a classic and introduces two new chapters reflecting the growing importance of applicability generalizability relevance and quality improvement and improvement science NEW Quality Improvement and Improvement Science chapter provides methods and frameworks to help students develop and assess improvement projects NEW Applicability Generalizability and Relevance Toward Practice Based Evidence chapter details cutting edge strategies to meet the growing need for patient centered practice based evidence UPDATED Revised content throughout reflects the latest methodologic approaches to ranking evidence verifying systematic reviews using meta aggregation and more Critical appraisal guidelines help students focus on specific aspects of a report for the most effective appraisal Clear user friendly writing style introduces concepts logically and clarifies difficult ideas Specific research tips translate abstract notions into practical strategies to help students confidently apply chapter lessons in real life situations Research examples throughout the text illustrate key points

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web jan 1 1997 the lanthanides comprise the largest naturally occurring group in the periodic table there are more than 100 minerals known to contain lanthanides but the only two of commercial importance are monazite and bastnaesite the chapter discusses the production of lanthanide elements by electrolysis of fused salts and by metallothermic reduction

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web the fifteen elements shown in table pageindex 1 from lanthanum La 4f 0 to lutetium Lu 4f 14 are lanthanoids Ln may be used as a general symbol for the lanthanoid elements although lanthanoids scandium Sc and yttrium Y are sometimes called rare earth elements they are relatively abundant in the earth s crust

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web nov 1 1998 production of lanthanides has shown a continuous increase in recent years 50 taking all these facts into

account it is reasonable to consider the development of corrosion protection methods using this family of compounds at first the lanthanide elements principally cerium were used in protection against corrosion at high

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web lanthanides metals peptides and proteins selectivity abstract the essential biological role of rare earth elements lay hidden until the discovery in 2011 that lanthanides are specifically incorporated into a bacterial methanol dehydrogenase

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web jan 1 2000 powell describes displacement chromatography and elution chromatography as the two principal methods for separating lanthanide cations by ion exchange chromatography in displacement chromatography the ions to be separated are first sorbed onto a column of the resin the analyte metals are eluted from the column

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web feb 4 2021 the lanthanides are located on the top row of the two rows of elements found below the main body of the periodic table placing the lanthanides and the actinides the row below the lanthanides below the other elements is just a matter of aesthetics the lanthanides belong to period 6 like cesium barium and hafnium