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Autore	Wang Jung-Der
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Nota di contenuto	Contents; Preface; 1 Introduction to Epidemiological Research; 1.1 Definition of epidemiology; 1.2 Evolving trends of epidemiological research; 1.3 Types of inferences in epidemiological research; 1.4 Outline of the basic principles of epidemiological research; 1.5 Summary; Quiz of Chapter 1; 2 Principles of Scientific Research: Deductive Methods and Process of Conjecture and Refutation; 2.1 The process of scientific research; 2.2 Deductive methods: Common logical reasoning; 2.3 Conjectures and Refutations; 2.4 Why take a refutational attitude? 2.5 The limitations of conjectures and refutations 2.6 Summary; Quiz of Chapter 2; 3 Scientific Hypothesis and Degree of Corroboration; 3.1 Hypothesis Formation - How to form a conjecture?; 3.2 What makes a hypothesis scientific?; 3.3 Successful refutation and auxiliary hypotheses - Has one disproved the primary hypothesis?; 3.4 Failure to falsify and degree of corroboration - Do the results of the study corroborate the primary hypothesis?; 3.5 Credibility of a hypothesis and decision-making; 3.6 Summary; Quiz of Chapter 3; 4 Causal Inference and Decision 4.1 Causal concepts in medicine and public health 4.2 Proposed criteria for causal decisions; 4.2.1 Necessary criteria; 4.2.2 Quasi-necessary criteria; 4.2.3 Other supportive criteria; 4.3 Objective knowledge and

consensus method; 4.4 Summary; Quiz of Chapter 4; 5 Basic Principles of Measurement; 5.1 What is measurement?; 5.2 Why does one perform measurement?; 5.3 How does one measure?; 5.3.1 Measurements in socio-behavioral science; 5.4 Accuracy of measurement: Validity and reliability; 5.5 Scales of measurement; 5.5.1 Nominal scale: A scale of qualitative measurement
5.5.2 Ordinal scale: A scale of semi-quantitative measurement
5.5.3 Interval scale: Quantitative measurement with or without an absolute zero starting point; 5.5.4 Ratio scale: Quantitative measurement with an absolute zero starting point; 5.6 Common evaluation method in medical diagnostic tests; 5.7 Validity and reliability of physico-chemical, biological and socio-behavioral measurements from a refutationist's point of view; 5.7.1 Measurement of chemicals in the environment or inside the human body
5.7.2 Conceptualization of exposure dose and its measurement in occupational and environmental medicine
5.7.3 Validity and reliability of socio-behavioral measurement; 5.8 How to perform accurate measurement by questionnaire Limitations of questionnaire information; 5.8.1 Construction of a questionnaire; 5.8.2 Interview procedures; 5.9 Summary; Quiz of Chapter 5; 6 Basic Measurements in Epidemiological Research; 6.1 Evolving trends in epidemiological measurement; 6.2 Basic measurements of outcome in epidemiology
6.2.1 Outcome measurement: Counting of events and states, rate, proportion, and ratio

Sommario/riassunto

Based on the concept of "conjecture and refutation" from the Popperian philosophy of science, i.e. looking for alternative causes, this book simplifies the design and inferences of human observational studies into two types: descriptive and causal. It clarifies how and why causal inference should be considered from the search for alternative explanations or causes, and descriptive inference from the sample at hand to the source population. Furthermore, it links the health policy and epidemiological concept with decisional questions, for which the basic measurement can be quality-adjusted surv
