

Lecture 1 · June 2025

Welcome & Introduction to Research

Instructor: Atalay Demiray, MD, MSc

Yale School of Public Health · Department of Health Policy and Management

Yale Summer Enrichment Medical Academy (YSEMA) · Summer 2025

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Welcome YSEMA

Introduction to Research

Atalay Demiray, MD, MSc
Department of Health Policy and Management

June 2025

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A meme featuring Dwight Schrute from the TV show 'The Office'. He is shown from the chest up, wearing his signature light blue dress shirt and dark tie, with his characteristic glasses. He has a serious, somewhat stern expression on his face. The background is a blurred office setting. The text is overlaid in large, white, bold, sans-serif font with a black outline.

**SCHOOL'S OUT FOR THE
SUMMER!**

**FALSE. YOU CAN TAKE SUMMER COURSES
TO GET AHEAD, CATCH UP, OR STAY ON
TRACK**

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Who am I?

Atalay Demiray

PhD student in Health Policy

From Turkiye

MD

MSc in Health Economics, Policy and Law

Erasmus University, Rotterdam, Netherlands

BA in International Relations

Koc University, Istanbul, Turkiye

- First-gen college graduate
- First-gen medical doctor
- First-gen PhD ... still loading ...

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About this Course

A General Introduction to Research...

What is this course about?

- While most healthcare professionals never contribute a single article, all are consumers of the information contained in this vast collection of knowledge.
- Keeping up with the literature is essential for continued success as a professional.
- This course is designed to help you keep up now and in the future.



Interpretation of
the Literature



Research
Design



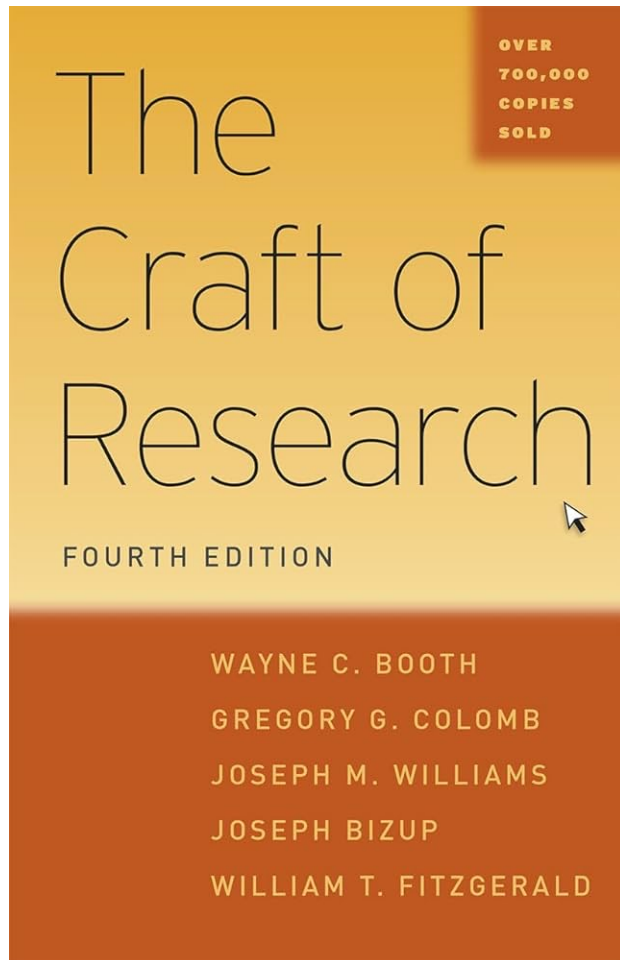
Statistical
Reasoning

Books

First You Read

&

Then We Discuss



Chapter 1: Thinking in Print

Chapter 2: Connecting with Your Reader

Chapter 3: From Topics to Questions

Chapter 4: From Questions to Problems

Chapter 5: From Problems to Sources

Chapter 6: Engaging Sources

Chapter 7: Making Good Arguments

Chapter 8: Making Claims

Chapter 9: Assembling Reasons and Evidence

Chapter 10: Acknowledgments and Responses

Chapter 11: Warrants

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Course Goals

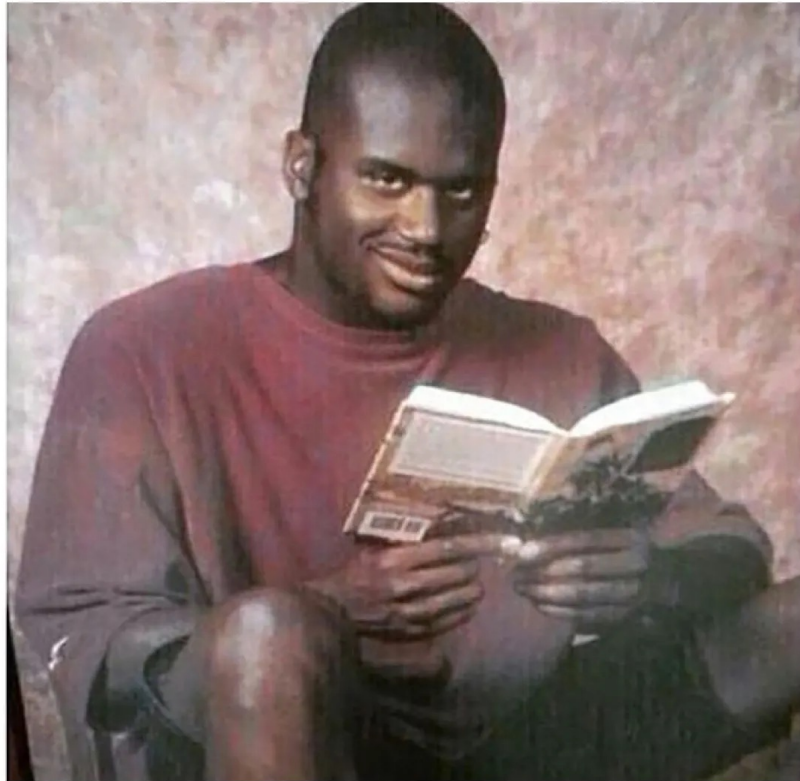
On completion of the course, students will be able to:

1. Describe the research process
2. Define health equity and explain its importance in healthcare and research.
3. Identify common examples of health disparities and discuss contributing factors.
4. Write a focused research question
5. Perform a literature search using online databases
6. Discriminate between high- and low-quality articles in the literature
7. Detect the various sources of bias in articles and materials
8. Compare quantitative and qualitative research methods
9. Identify threats to internal and external validity
10. Demonstrate the ability to discuss articles using research terminology

Course Requirements

- **Participation:** Your level of participation will influence the advancement of your current skills.
- **Individual Project:** In the final class of this course, you will present your research idea in a 5-minute individual presentation along with your research portfolio. This portfolio should include an introduction to your research subject, a brief literature review, a focused research question. You may also include planned research methodologies, statistical analysis, or any further details, though these are not required.

Teacher: 'This project is due in two weeks.'



Me: 'So I should start the night before? Got it.'

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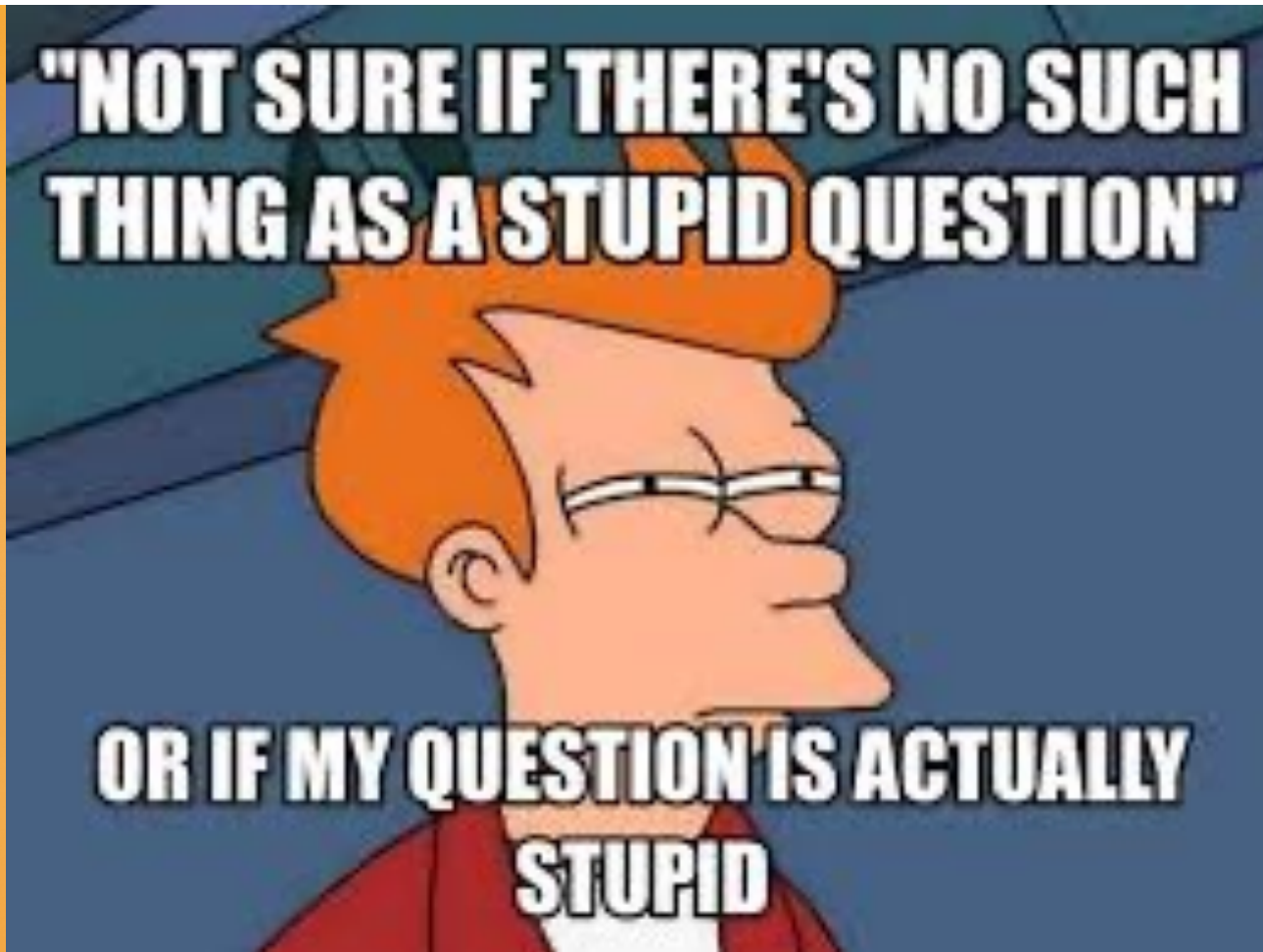
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Questions





**Ask Me After Class
or Email Me!**

Objectives

- Define research.
- Describe types of research.
- Describe and discuss the importance of research in the health professions.
- Begin to develop a scientific approach to study and practice.

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Object

- Define
- Descri
- Descri
of rese
- Begin
approa

**ACCORDING TO OUR
RESEARCH**

**AND BY RESEARCH, I
MEAN GOOGLE...**

Yale Schoo

quickmeme.com

What does “research” mean to you?

Word research conjures up the following images:

- Individuals hidden away in a lab doing something unrelated to everyday life
- Boring work forced on students
- The pursuit of information that has little application in the real world
- Not something a healthcare professional does in clinical practice

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The Etymology of Research: An Endless Quest

The Word "Research", derived from Middle French "recherche"



The Word "Research"

- Meaning: "to go about seeking"
- From Old French "recherchier"
- "Re-" + "cerchier" (or "sercher")

Research as an Endless Process

- Continuously seeking new info
- Repeatedly searching for answers
- An ongoing journey of discovery

Research Equals Curiosity

Research process **difficult for many to understand**

- Often requires use of formulas and language only other researchers comprehend
- Research findings often contradictory

Research provides **basis for practice**

- Will be part of day-to-day job in the future
- Practice can only advance by applying evidence of what works.

Seeking an answer to a question is a form of research.

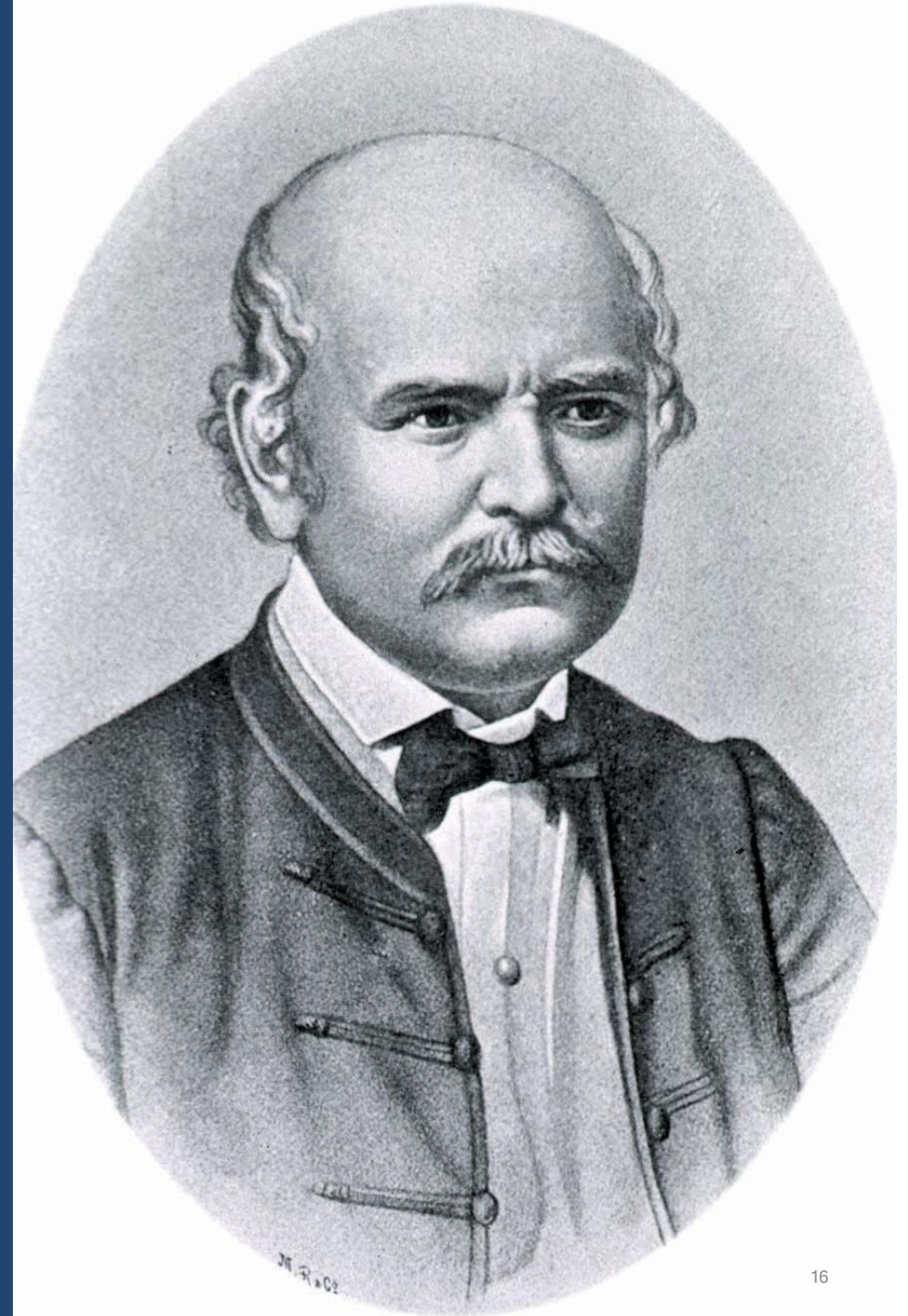
- Much “research” informal and without systematic constraints

Learning how research works:

- Helps relieve anxieties
- Increases ability to appreciate and enjoy process

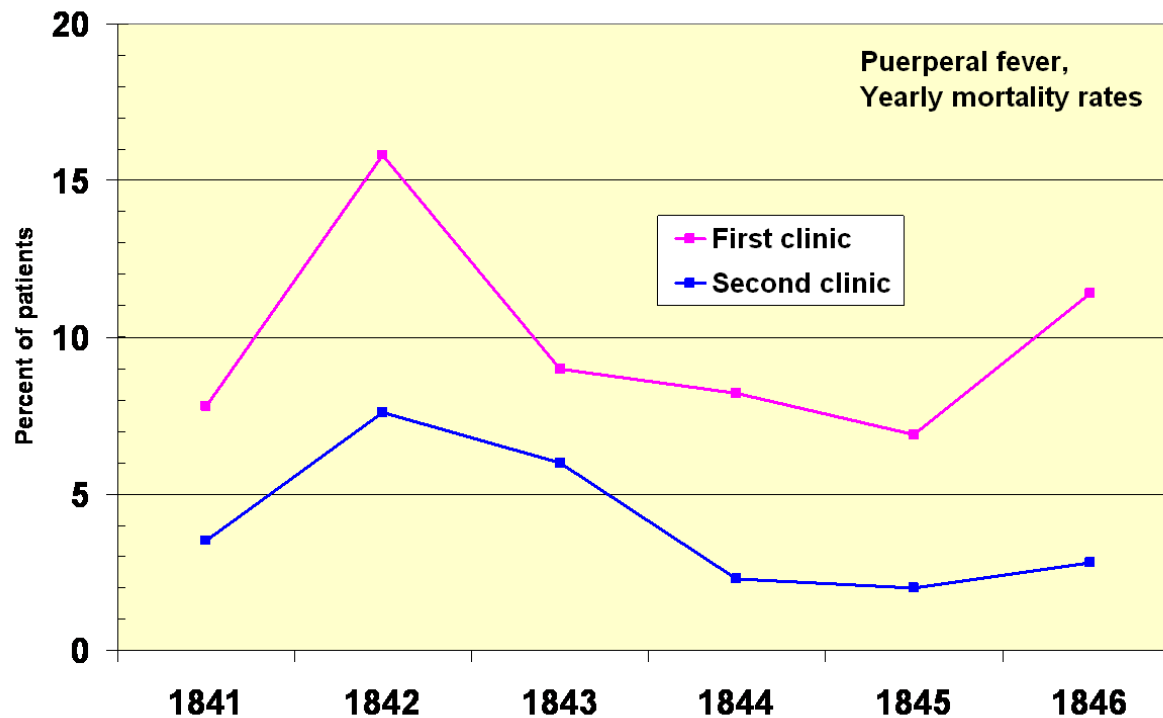
**“Dr. Ignaz
Semmelweis
Father of
Infection Control
Savior of Mothers
(1818–1865)**

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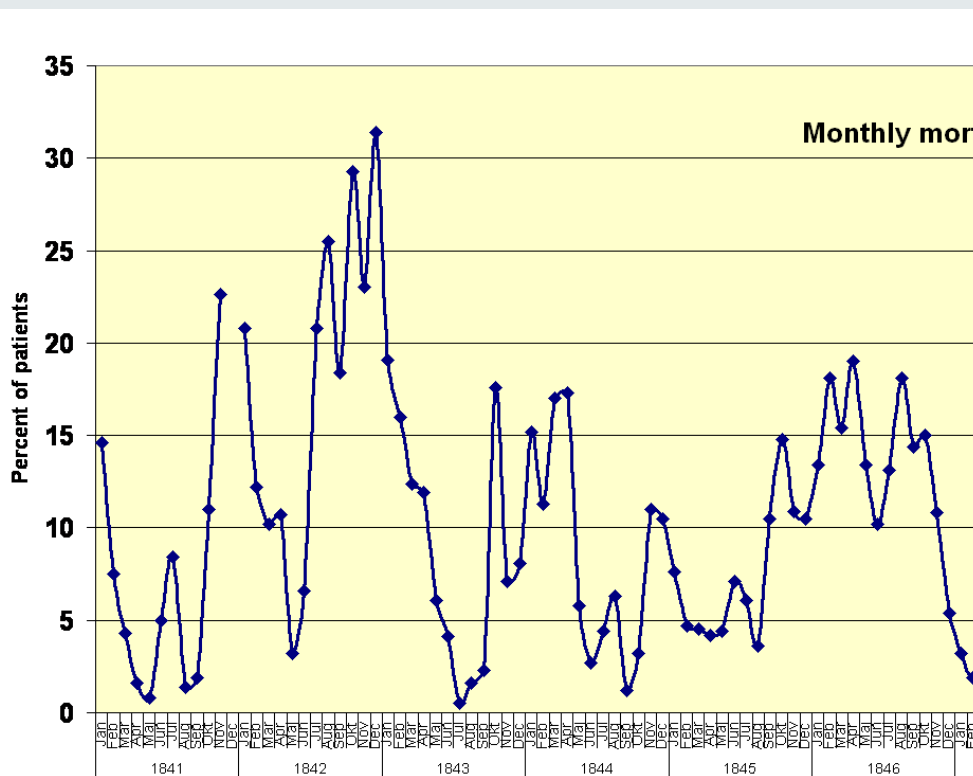
Ignaz Semmelweis and the Birth of Infection Control

Hungarian born physician who received his MD degree in Vienna in 1844.

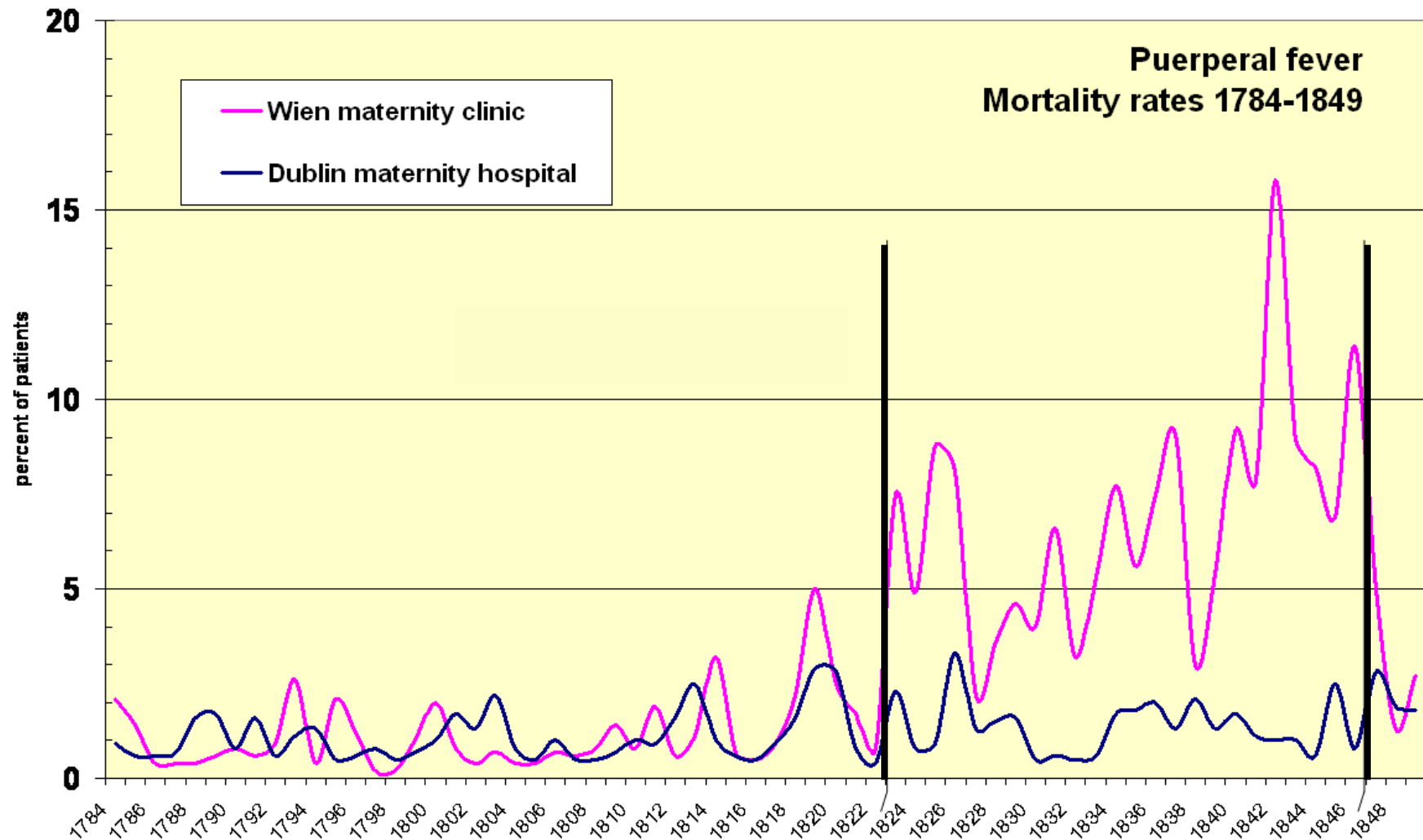


Ignaz Semmelweis and the Birth of Infection Control

Observation and Hypothesis: Semmelweis observed that doctors often moved directly from conducting autopsies to delivering babies, without washing their hands. He hypothesized that "cadaverous particles" from the autopsies were being transferred to the mothers, causing the infections.

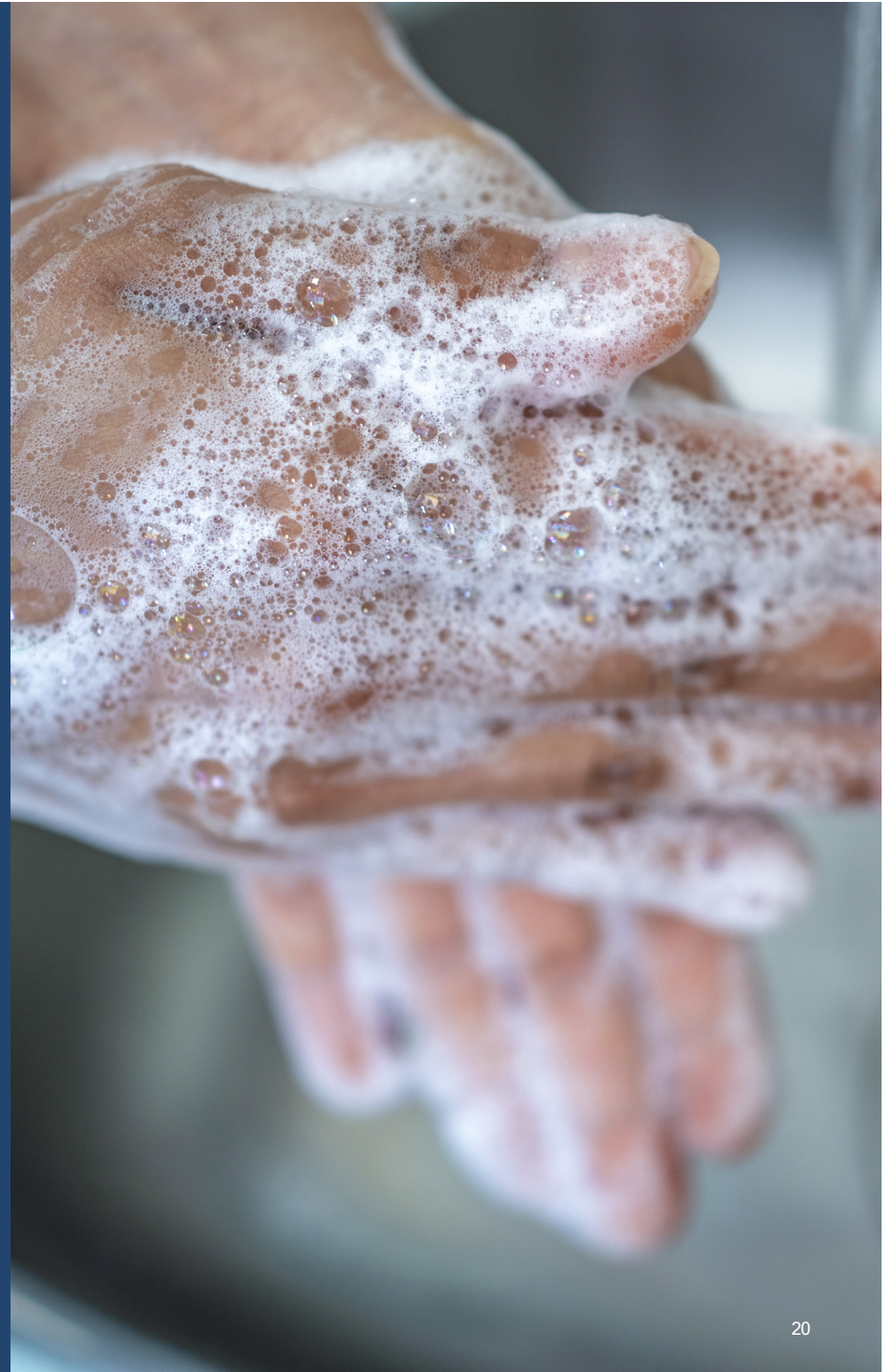


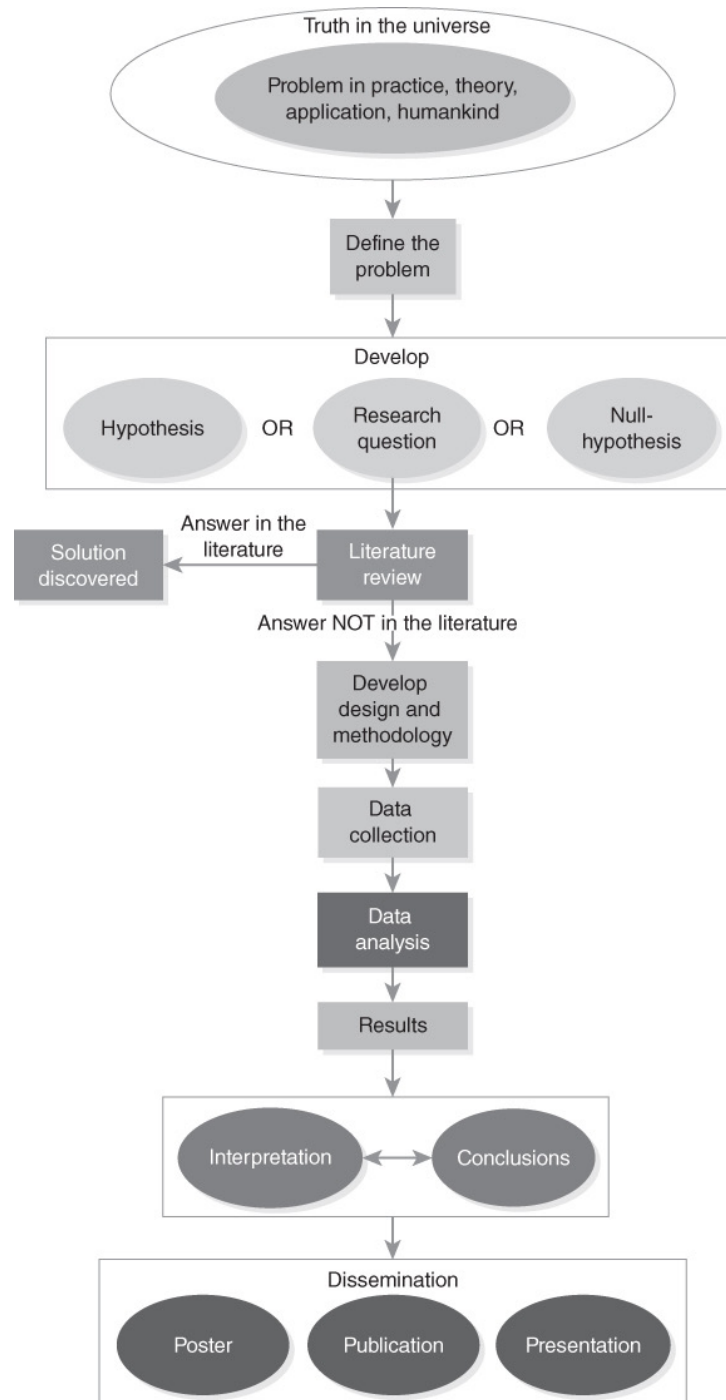
Ignaz Semmelweis and the Birth of Infection Control



Impact & Publication

- Years later, the advent of germ theory and the work of scientists like Louis Pasteur and Joseph Lister led to the full recognition and acceptance of Semmelweis's findings.
- Semmelweis's research exemplifies the power of careful observation, hypothesis testing, and the implementation of preventive measures in improving public health.
- His work laid the foundation for modern antiseptic practices, highlighting the importance of hygiene in medical settings.





A Hearing with Dr. Anthony Fauci June 3, 2024 10:00 am



A Hearing with Dr. Anthony Fauci

COVID-19 vaccine · Get the latest information from the CDC. >



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Types of Research

Type	Description	Example(s)
Pure	Abstract and general, concerned with generating new theory and gaining new knowledge for knowledge sake	Theory development
Experimental	Manipulation of one variable to see its effect on another variable, while controlling for as many other variables as possible and randomly assigning subjects to groups	Double-blind random assignment control groups, response to an intervention
Clinical	Performed in the clinical setting where control over variables is quite difficult	Drug trials, therapeutic results
Applied	Designed to answer a practical question, to help people do their jobs better	Time use studies, evaluation of different types of interventions with the same purpose
Descriptive	Describing a group, a situation, or an individual to gain knowledge that may be applied to further measurement of characteristics, response groups or situations, as in case studies or trend analyses	Surveys, qualitative research, response to phenomena
Laboratory	Performed in laboratory surroundings that are controlled	Basic science research

Data from Bailey DM. *Research for the Health Professional: A Practical Guide*, 2nd ed. Philadelphia, PA: FA Davis; 1997, xxii.

Developing a Research Project

1. List interests
2. Prioritize in order of importance/interest
3. Revise list based on your capabilities
4. Revise list based on things important to effort
5. Reprioritize on what is important to society or health
6. Make decisions about what can be accomplished
7. Surviving or central topic is basis of research project
8. Develop timeline for study
9. **Get started**

What does “research” mean to you?

“

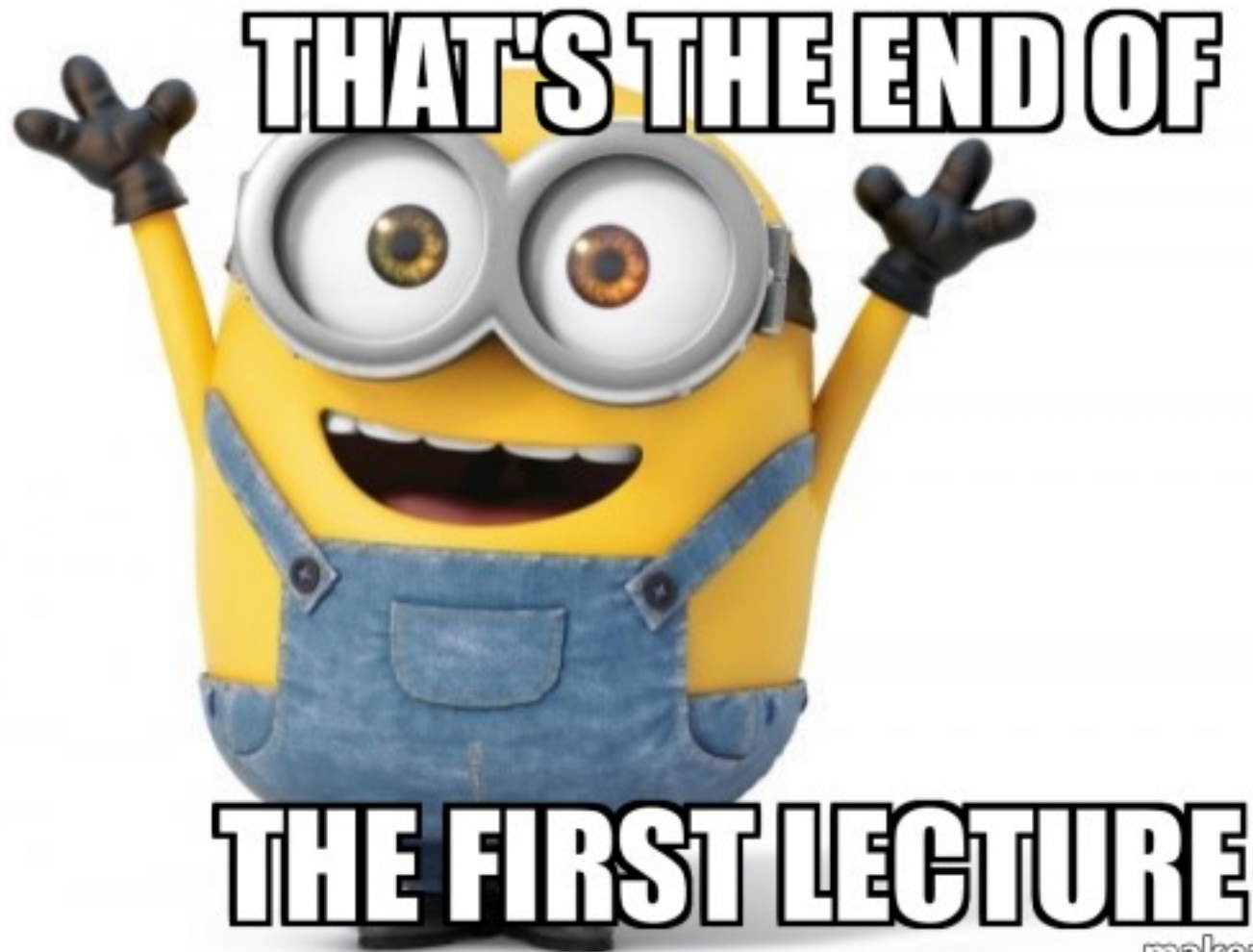
What does “research” mean to you?

“
Research is formalized curiosity.
It is poking and prying with a purpose.

- Zora Neale Hurston

Zora Neale Hurston





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Read

Chapter 1: Thinking in Print: The Uses of Research, Public and Private

Chapter 2: Connecting with Your Reader: Creating a Role for Yourself and Your Readers

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