



LITHUANIAN UNIVERSITY  
OF HEALTH SCIENCES

# Lecture

# Becoming a Physician Researcher

## Part 3

## How to construct the models?

Dr. Aida Budrevičiūtė

Lecturer



# What are the main concepts?

- **RESEARCH QUESTION** is "a question that a research project sets out to answer". Choosing a research question is an essential element of both quantitative and qualitative research. Good research questions seek to improve knowledge on an important topic, and are usually narrow and specific.
- **OBJECTIVES** define the specific aims of the study and should be clearly stated in the introduction of the research protocol.
- **HYPOTHESIS** is an assumption, an idea that is proposed for the sake of argument so that it can be tested to see if it might be true.
- **VARIABLES** – the main elements of the research and variable is a measurable or quantifiable characteristic of a person, object or phenomenon that can take different values. Variables are building blocks of research hypothesis.
- **MODEL** - a theoretical model is a framework that researchers create to structure a study process and plan how to approach a specific research inquiry.

## Literature

1. Mattick, Karen; Johnston, Jenny; de la Croix, Anne (2018). How to write a good research question. *The Clinical Teacher*. 15 (2): 104 -108. doi:10.1111/tct.12776.
2. <https://www.merriam-webster.com/dictionary/hypothesis>.
3. Hanson BP. Designing, conducting and reporting clinical research. A step by step approach. *Injury*. 2006;37:583–94.
4. <https://howmed.net/community-medicine/variables-in-research/>.
5. <https://www.indeed.com/career-advice/career-development/theoretical-model>.

# Questioning assumptions about qualitative and quantitative research methods

## Quantitative study

- Research that examines phenomena through the numerical representation of **observations** and **statistical analysis**.
- The method used is **deductive**: the conclusions follow necessarily from the premises.
- It needs to develop **hypothesis**, use prior theory, anticipate conclusions, to analyze data numerically.
- It involves **careful examination of data** (e.g., to determine how key variables are distributed and correlated) before researchers launch into a main analysis.
- Frequently includes the reworking of **research questions** and subsequent **literature review**.
- The frame of the study can change in response to the data.

## Qualitative study

- Research involving detailed **verbal descriptions** of **characteristics, cases, and settings**. Qualitative research typically uses observation, interviewing and document review to collect data.
- The method used is **inductive**: reasoning from the specific to the whole and focusing on the particulars rather than the general.
- It is the particulars that tell the story and this involves using **an emerging, flexible structure**.
- Qualitative researchers are expected to gather **rich descriptive data** and **ground conclusions** and understandings in the data mined, not prior theories.
- Qualitative studies often involve overt planning (e.g., by creating start codes prior to analysis) before the researcher launches into a main analysis.

### Literature

1. Bruce CD. Questions Arising about Emergence, Data Collection, and Its Interaction with Analysis in a Grounded Theory Study. *International Journal of Qualitative Methods*. 2007;6(1):51-68. doi:10.1177/160940690700600105.
2. Haig A, Dozier M. BEME Guide no 3: systematic searching for evidence in medical education--Part 1: Sources of information. *Med Teach*. 2003 Jul;25(4):352-63. doi:10.1080/0142159031000136815.

# The model of qualitative research

## Practical example

### The aim of the study

To determine the priorities in the management of public and private primary health care institutions by using the focus group discussion method with managers.

### The following objectives of the research were formulated:

1st objective. To determine the priorities of competitive advantage of the primary health care institution.

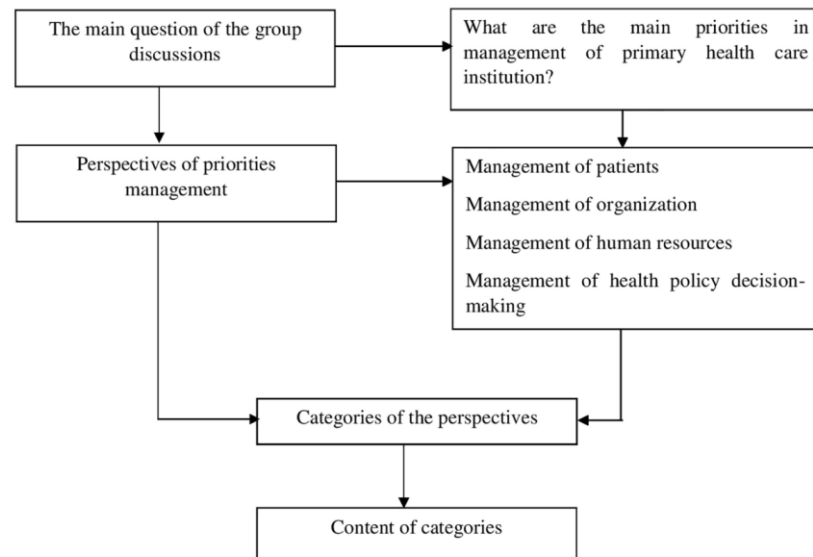
2nd objective. To explore a key source of competitive advantage of the primary health care institution.

3rd objective. To describe essential activities of patient management of the primary health care institution.

4th objective. To reveal decisions that increase the competitiveness of the primary health care institution.



Priorities in effective management of primary health care institutions in Lithuania: Perspectives of managers



Source: researchers' own (2015-2018 year)

Fig 2. Proposed methodology of data analysis.

### Literature

1. Budrevičiūtė A, Kalėdienė R, Petrauskienė J (2018). Priorities in effective management of primary health care institutions in Lithuania: Perspectives of managers of public and private primary health care institutions. PLoS ONE 13(12): e0209816. <https://doi.org/10.1371/journal.pone.0209816>

# The model of results of qualitative research

## Practical example

- During focus group discussions, the researchers sought to puzzle out the methods developing the value creation of primary health care institutions, and the elements of modern management are presented in the Table.
- The main elements of value management with focus on chronic diseases management were health promotion, quality of life, time management, satisfaction, communication, partnership with health care professionals, values and lifestyle of patients.

**Table 1.** Contemporary value management of public and private primary health care facilities

Perspectives of priorities management	Elements of value creation management	
	Public primary health care facilities	Private primary health care facilities
Health policy	Partnership with health care professionals Management of changes Priorities Lobbying	Management of chronic diseases Management of risk factors Priorities
Organization	Structure Image Culture Society	Place Time management Culture Environment
Human resources	Teamwork Knowledge Communication Competencies	Teamwork Vision Communication Authority Trust Competencies
Services	Quality Health management Consultation Early diagnosis of diseases Health improvement and promotion	Quality Partnership with secondary and tertiary levels Management of results Diagnosis of diseases
Patients	Health promotion Responsibility for health Quality of life Time management Satisfaction Communication Partnership with health care professionals	Health promotion Lifestyle Values Partnership with health care professionals

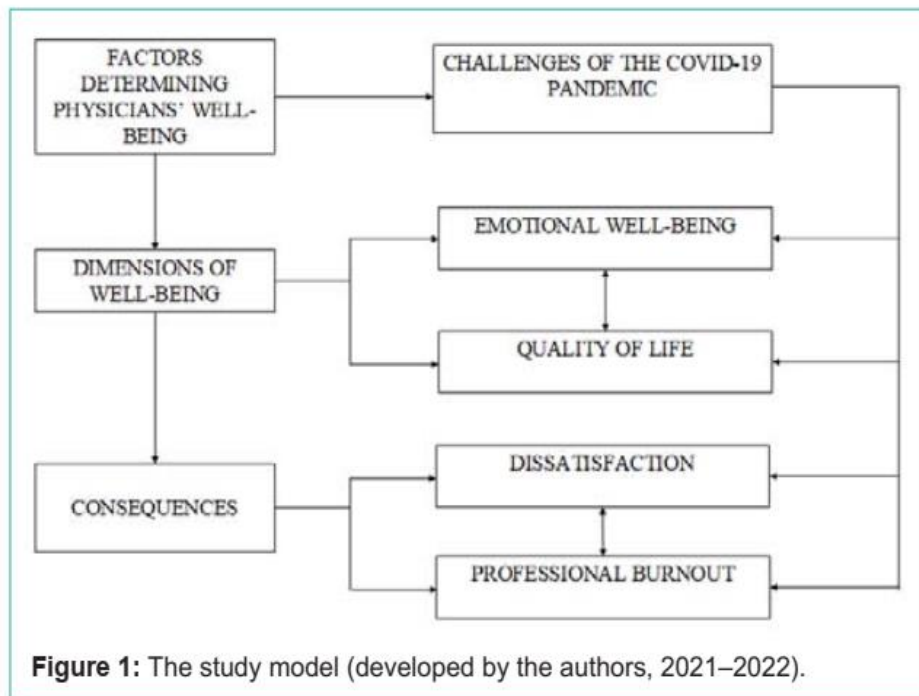
### Literature

1. Budrevičiūtė A, Kalėdienė R, Paukštaitienė R, Sauliūnė S, Valius L. (2019). Management of type 2 diabetes mellitus at primary health care level in Lithuania. *Health Policy and Management*, 1(11). <https://doi.org/10.13165/SPV-19-1-11-01>.

# The model of quantitative research

## Practical example

- **The aim of the study** is to investigate the links between different dimensions of the well-being of physicians during the pandemic.
- **Methods.** An anonymous survey of physicians (n=191) working in a family physician's team was carried out from June 21, 2021 to September 17, 2021.
- **The study model.** The researchers developed a study model encompassing the impact of the challenges of the COVID-19 pandemic on the well-being of physicians (emotional well-being and quality of life) and the impact of the pandemic on physicians' dissatisfaction and professional burnout.



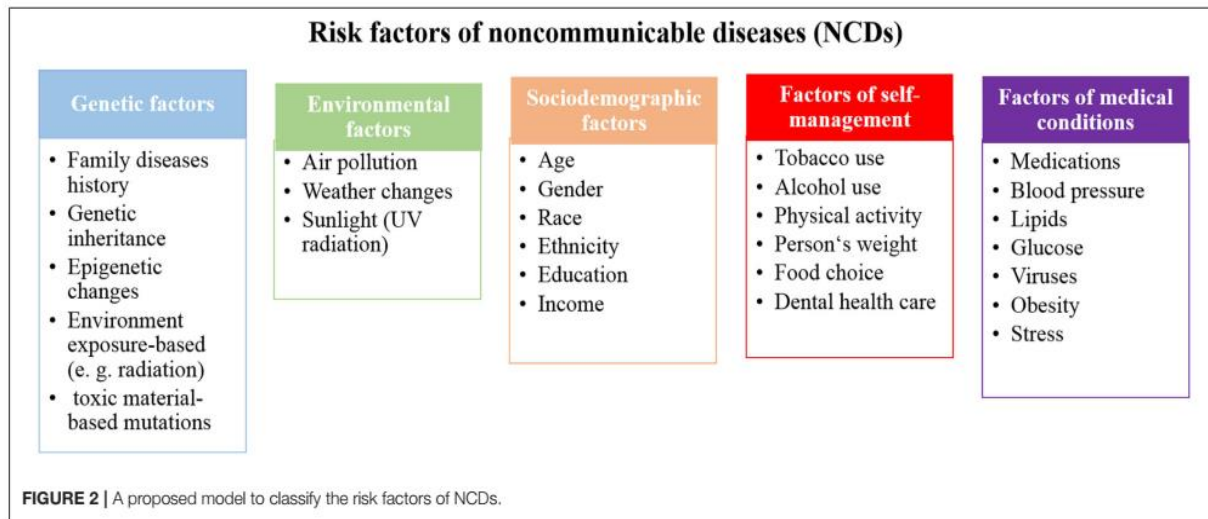
### Literature

1. Budrevičiūtė A, Raila G, Paukštaitienė R, Valius L. (2022). An assessment of the well-being of physicians working in a family physician's team during the COVID-19 pandemic in Lithuania. *Journal of Family Medicine*, 9(4):1298. <https://doi.org/10.26420/iffammed.2022.1298>.

# The model of scientific literature research

## Practical example

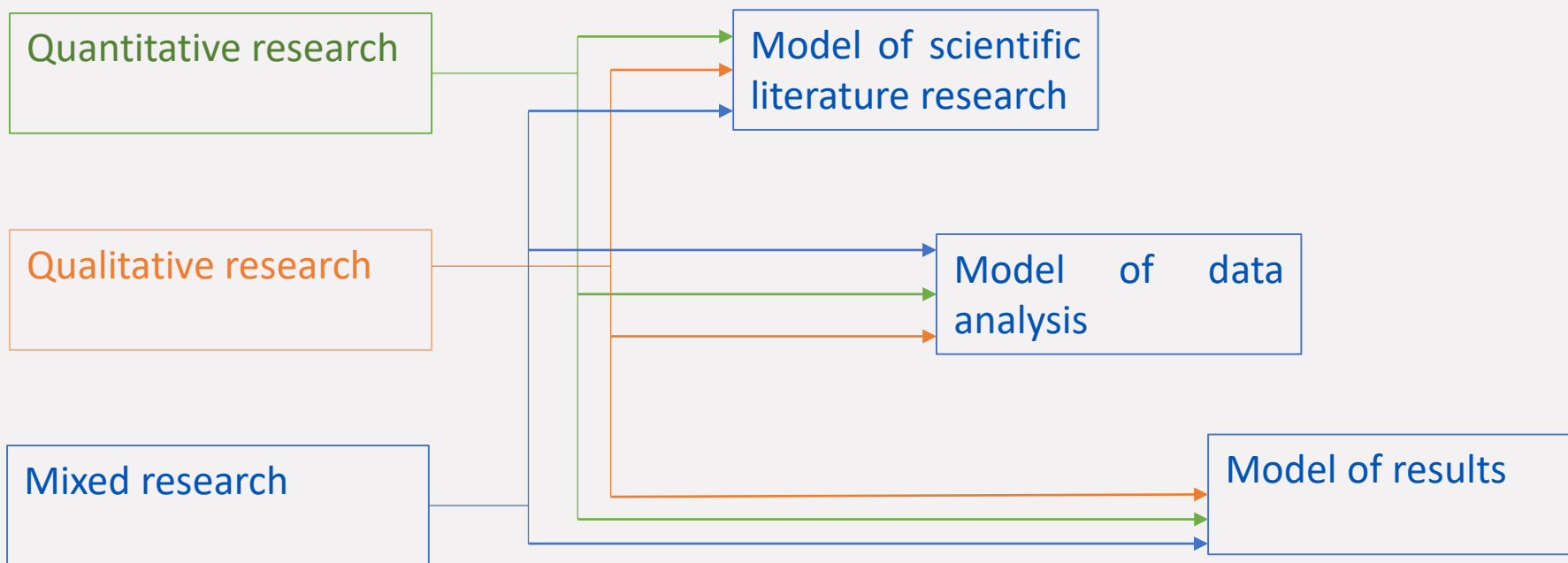
- Several factors can increase the amount of opportunities to develop NCDs and can be classified in different ways.
- In one approach, risk factors are classified as modifiable or nonmodifiable factors that can have changeable or non-changeable conditions, respectively.
- The modifiable risk factors involve high blood pressure, smoking, diabetes mellitus, physical inactivity, obesity, and high blood cholesterol, while the non-modifiable risk factors involve age, gender, genetic factors, race, and ethnicity.



### Literature

1. Budrevičiūtė A, Damiati S, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, Katilevičiūtė A, Khoja S, Kodžius R. (2020). Management and prevention strategies for non-communicable diseases (NCDs) and their risk factors. *Frontiers in Public Health*, 574111. <https://doi.org/10.3389/fpubh.2020.574111>.

## The proposed point of view for research models development





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“I have not failed. I’ve just found  
10 000 ways that won’t work”.

Thomas A. Edison

American inventor and businessman

11 February 1847-18 October 1931

# The lecturer contacts

Dr. Aida Budrevičiūtė

Email [aida.budreviciute@lsmu.lt](mailto:aida.budreviciute@lsmu.lt)

Lithuanian University of Health Sciences

Department of Family Medicine

Eivenių street 2, LT-50161 Kaunas, Lithuania