



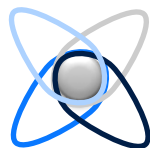
# The Struggle for evidence in physical and rehabilitation medicine

Publication rate of Randomized Controlled Trials and Systematic Reviews is growing more than in other therapeutic fields

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Informed decisions.  
Better health.



# Introduction

In the world of PRM, there is often a sense of a **lack of high quality scientific evidence** to guide clinical practice

- “A clinician with a clinical question who does a diligent search for evidence will frequently come up with nothing, not even weak research, and may have to be satisfied with findings for a different patient population and reasoning by analogy” (Dijkers et al.)



# Introduction

A **steady growth** has been reported seen for research in physical and rehabilitation medicine (Negrini S, Eur J Phys Rehab Med 2012)

Comparing publication in 1989-2001 vs 2001-2013, rehabilitation researchers publish more than **twice the number of clinical trials** vs the broader healthcare field, but proportionally **less systematic reviews** (with and without meta-analyses) (Jesus et al, Arch Phys Med Rehab 2016)

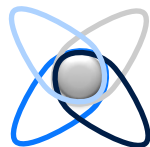
Rate of growth of papers published in adult and pediatric rehabilitation in the period 1998-2013: **general increase of papers in PRM**, and particularly those of higher quality (Mimouni et al, Arch Phys Med Rehab 2016)

## Aim

The aim of this study was

- to **examine trends in the publication of research** evidence
- specifically **RCTs and systematic reviews**
- in PRM literature
- **in comparison with comparable healthcare specialties**
- with specific attention to trends in recent years





# Methods

## Design

- Bibliometric study

## Research **strategy**

- PubMed
- Years: 1964-2017

Under the 2<sup>nd</sup> level term “therapeutics”, we searched the 3<sup>rd</sup> level **MeSH terms**

- rehabilitation
- physical therapy modalities
- drug therapy

## Filters

- humans
- results by year
- randomized controlled trial
- systematic reviews
- meta-analysis

To **check results** we searched also the 4<sup>th</sup> level more precise MeSH terms

- exercise therapy
- neurological rehabilitation



# Data analysis

All data are presented either in **absolute values** or in **relative percentages**

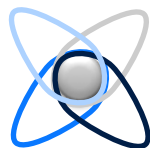
**Regression analysis** for change in time

- Linear regression
- Fractional polynomial regression

**P value** of less than 0.05 was considered statistically significant.

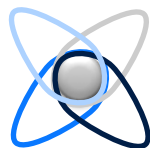
For **statistical analysis**, SPSS Version 20.0 (SPSS Inc, Chicago, IL) was used.





## Results: growth of papers

Growth of papers	Topic	R-squared according to the regression model	
		Linear model	Polynomial model
In Medline	Rehabilitation	0.8094	<b>0.9048</b>
	Physical Therapy	0.1791	0.5538
In Rehabilitation	Randomised Controlled Trials	0.7185	<b>0.9568</b>
	Systematic Reviews	0.7880	<b>0.9885</b>



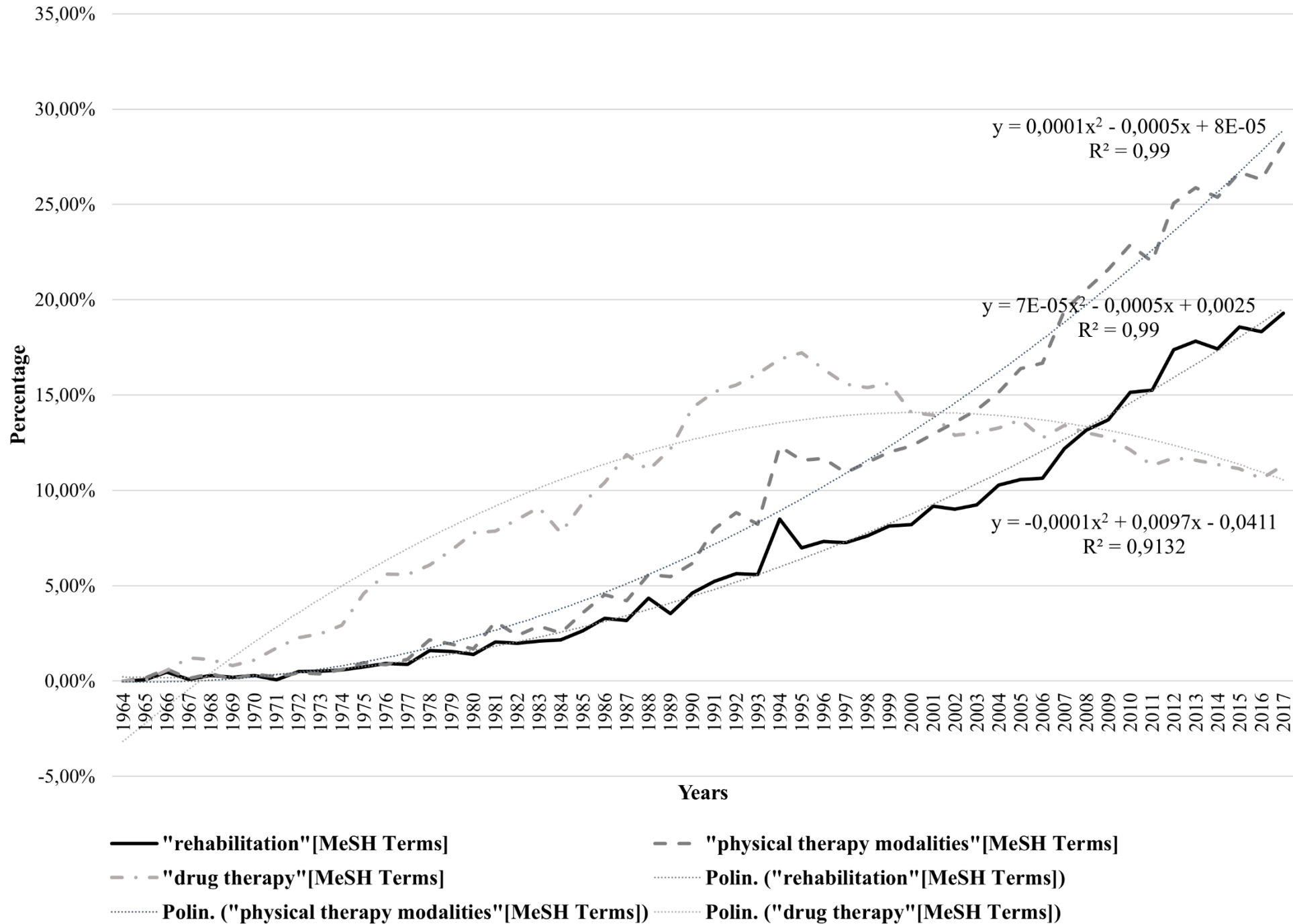
## Results: relative growth in different fields

	Topic	R-squared according to the regression model	
		Linear model	Polynomial model
Number of papers per year	Rehabilitation	0.8546	<b>0.9813</b>
	Physical Therapy	0.7603	<b>0.9433</b>
	Drug Therapy	<b>0.9367</b>	<b>0.9843</b>
RCTs	Rehabilitation	0.7185	<b>0.9568</b>
	Physical Therapy	0.7185	<b>0.9421</b>
	Drug Therapy	<b>0.9546</b>	<b>0.9586</b>
Systematic Reviews	Rehabilitation	0.7096	<b>0.9736</b>
	Physical Therapy	0.6871	<b>0.9655</b>
	Drug Therapy	0.7461	<b>0.9703</b>



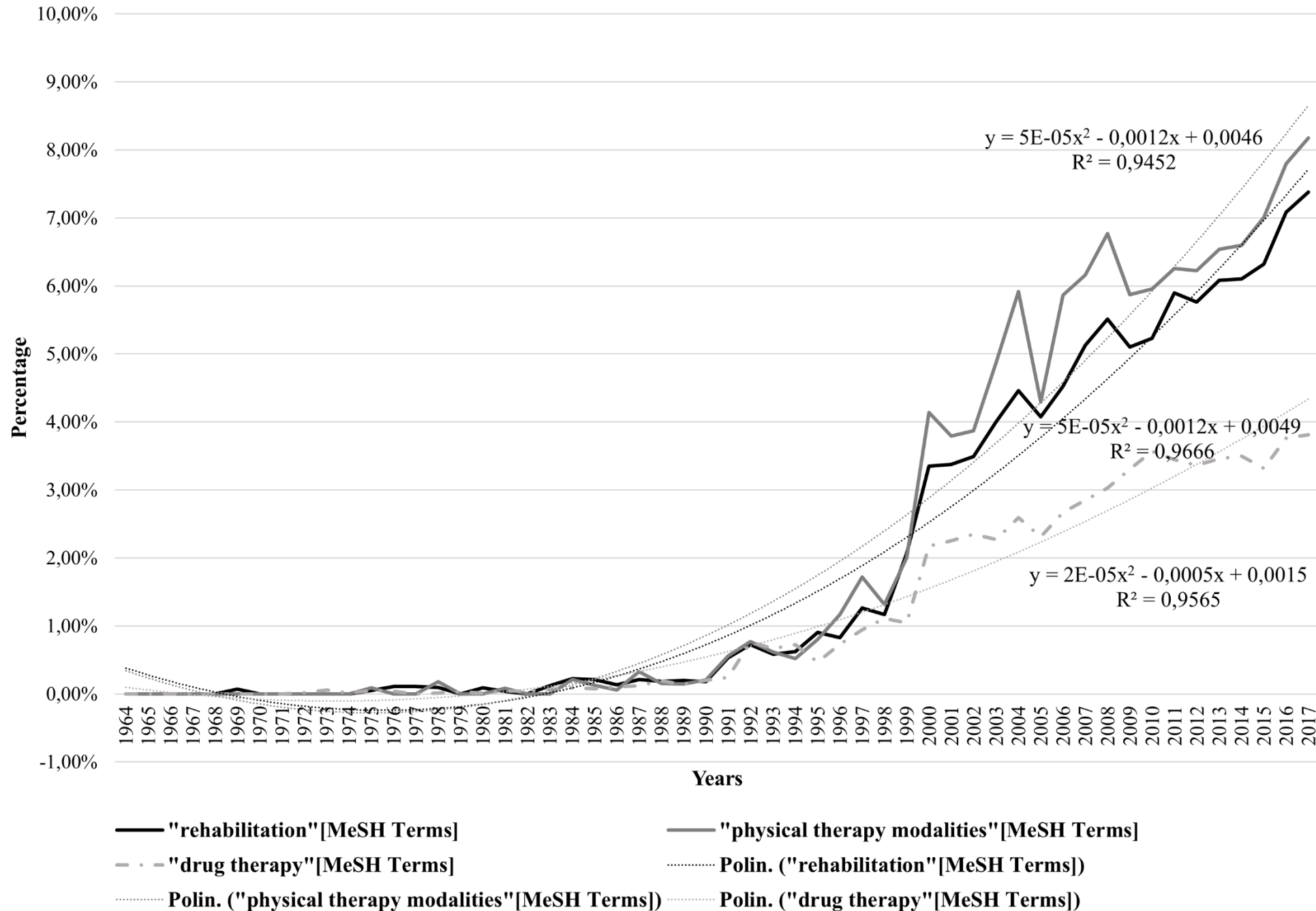
RCTs

Differences are statistically significant (P < 0.001)



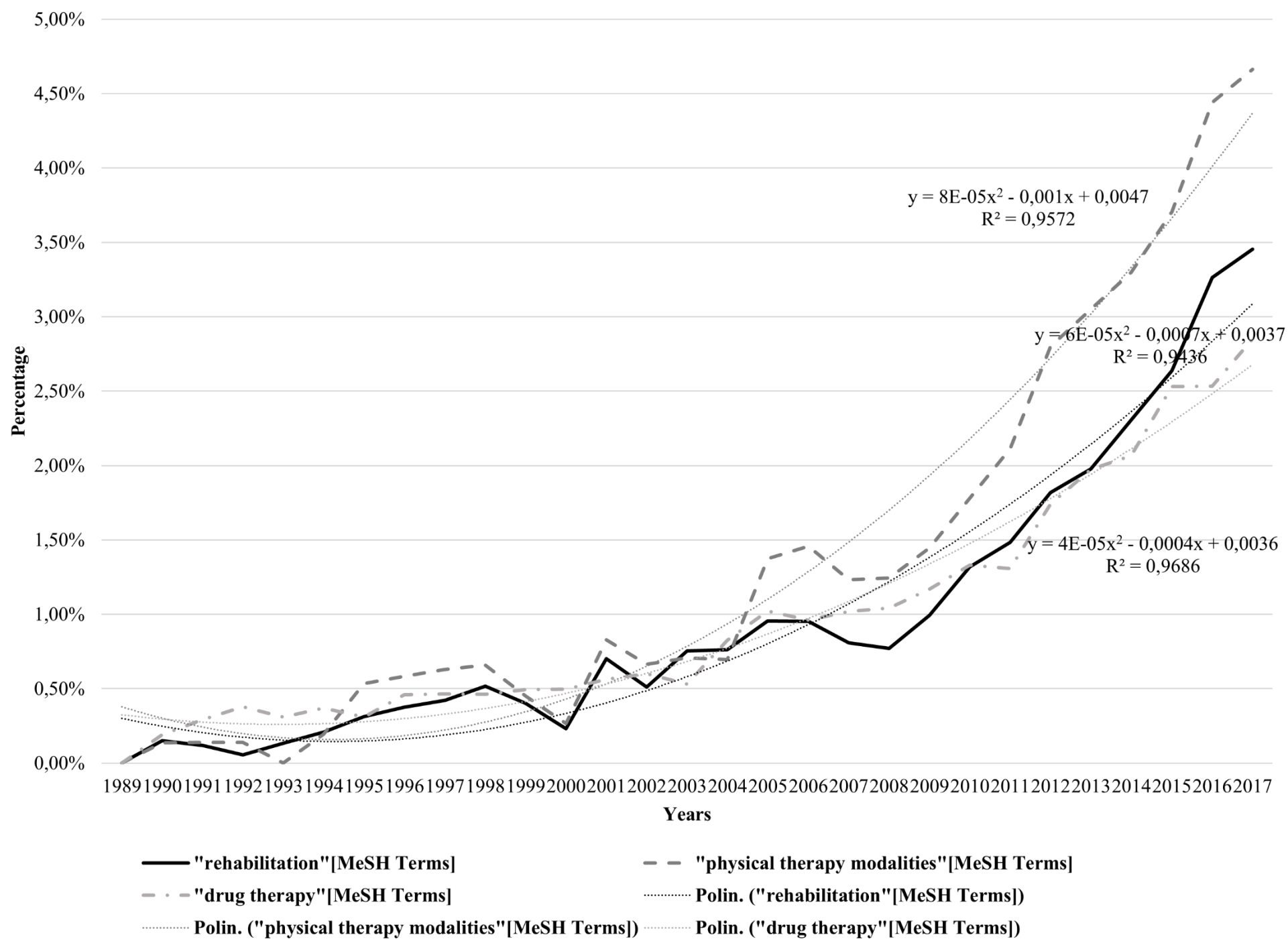
## Systematic reviews

Differences are statistically significant ( $P < 0.001$ )



## Meta-analysis

Differences are statistically significant ( $P < 0.001$ )





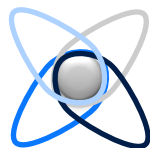
## Conclusion

In comparison to trends in other therapeutic fields, **evidence-based research** (as represented by RCTs, systematic reviews and meta-analyses) **is constantly increasing** in the field of PRM.

This is **in contrast with the general feeling among PRM practitioners** that there is a lack of evidence in the field, which is also described as one of the biggest problems faced by the specialty area by health care managers when evaluating the field.

In this context the **quality of the evidence** is also important to consider, but as discussed, this was beyond the scope of this paper and should be addressed in future studies.





# Thank you

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