GBD 2019 prevalence of low back pain, neck pain, and knee osteoarthritis in five countries

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UAM
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UZH
Epidemiology
Biostatistics
Prevention

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Conflicts of interest & support

- **No conflicts of interest** with respect to the **topic**

- **Viewpoints** expressed represent **my own**

- Support by **COST** (1,500 EUR)

Background

- A **call** for **action:** LBP **Lancet Series** (2018)

- **MSK disorders** rank **first** in **YLD** and **sixth** in **DALYs** (GBD 2019)

- What are the **primary data input studies** that underpin **modelled prevalence estimates** of **LBP**, **NP**, and **knee OA** and what is the **quality** of these estimates?

Objectives

- **Describe** and **appraise** the **primary studies** of **LBP**, **NP**, and **knee OA** in **Australia**, **Brazil**, **Canada**, **Spain**, and **Switzerland**

- An **approach** to use **GRADE** to rate the **quality** of **modelled prevalence estimates**

Methods

GBD Data Input Sources Tool

Extraction and **tabulation of key information** from primary studies & **risk of bias assessment**

| |
|---|
| **GRADE guidelines 30** to assess **quality** of modelled prevalence (**risk of bias**, **inconsistency**, **indirectness**, and **imprecision**) |

Number of primary studies

Country	LBP primary input studies (1990 to 2019)	NP primary input studies (1990 to 2019)	knee OA primary input studies (1990 to 2019)
Australia	12	0	0
Brazil	10	1	0
Canada	7	0	1
Spain	19	1	2
Switzerland	19	0	0
Total	67	2	3

Risk of bias of primary studies

- Study's **target population**

- Unacceptable **case definition**

- Instrument with **unknown reliability** and **validity**
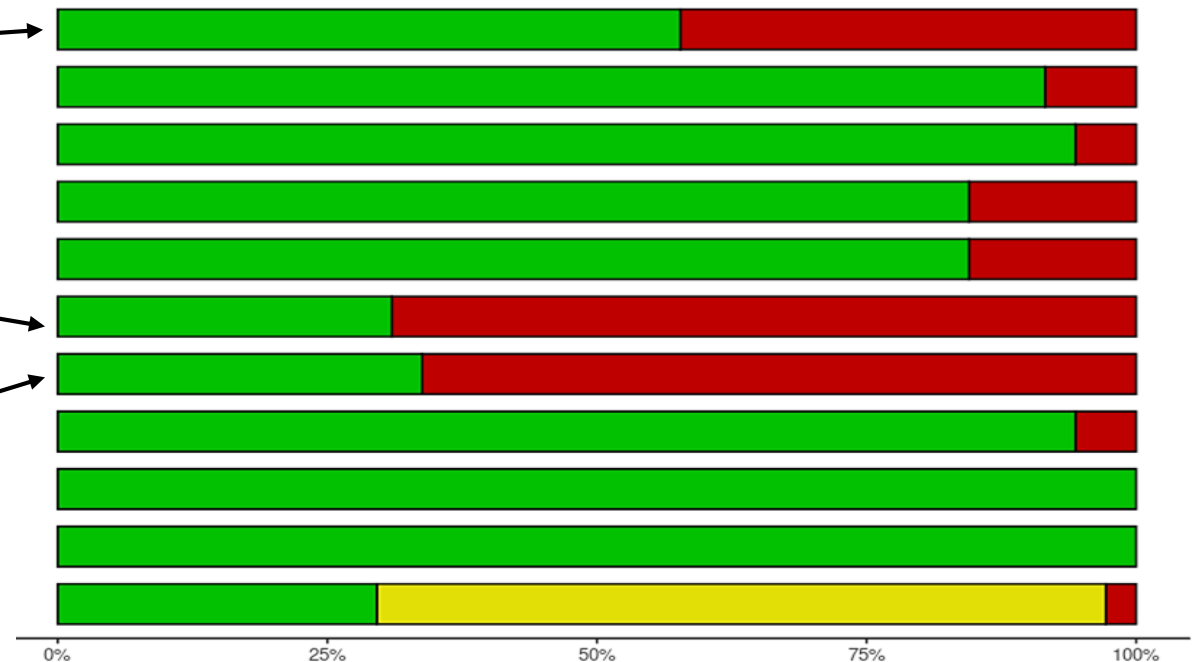
GRADE 30 application

| Example of the proposed pragmatic quality assessment of the modelled GBD 2019 prevalence estimates (1990 to 2019)						
Country, Condition	Risk of bias	Inconsistency	Indirectness	Imprecision	Range of modelled point prevalence estimates (95% UIs)	Overall quality of modelled evidence
Switzerland, LBP	**Very serious**	**Serious**	Not serious	Not serious	15.0 to 19.2 (13.1 to 20.3)	⊕◯◯◯ **Very Low**
Canada, NP	**Very serious**	Not serious	**Serious**	Not serious	3.6 to 4.3 (2.9 to 5.4)	⊕◯◯◯ **Very Low**
Spain, Knee OA	**Very serious**	Not serious	Not serious	Not serious	5.8 to 8.4 (5.0 to 9.6)	⊕⊕◯◯ **Low**

Main findings

- Primary studies' limitations: **representativeness**, **case definitions**, and **instruments**

- **Quality** of **modelled prevalence estimates** ranged between **very low** and **low**

- **Feasible** to establish **pragmatic approaches** to rate **quality** of GBD estimates

Additional findings

- **Modelled prevalence** metrics were consistent and **precise**

- Some **exceptions** to **consistency**
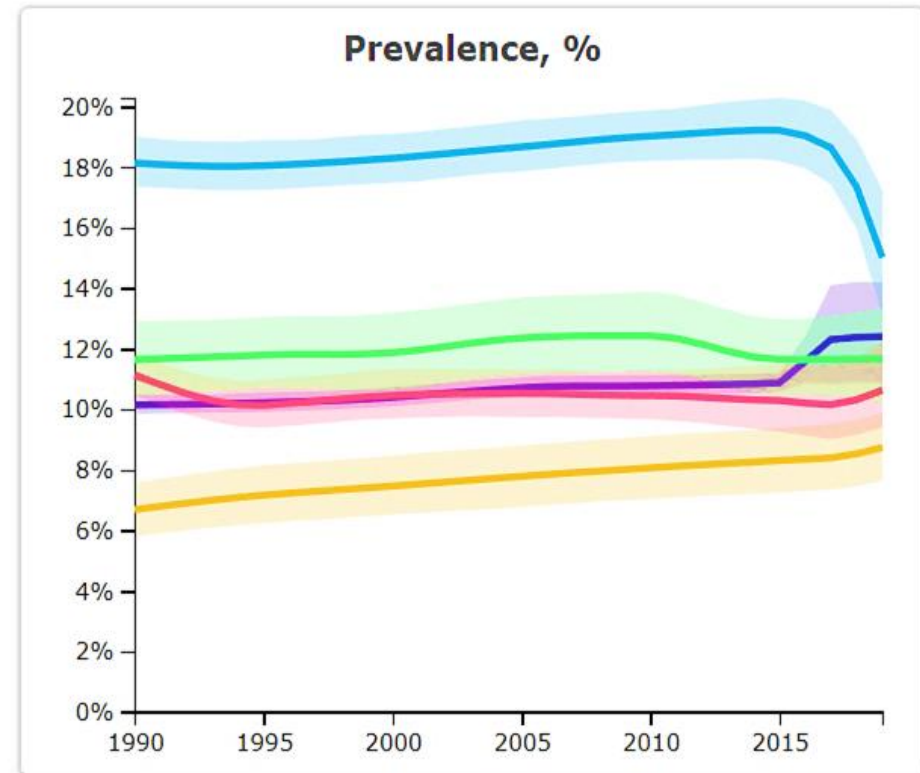
Prevalence, %

Legend

Modelled prevalence trends of Switzerland

Challenges and opportunities

- The **optimal quality assessment** approach remains **unknown**

- **MSK research** should promote **acceptable case definitions** and **validated tools**

- **Burden-EU** is a **promising driver** to stimulate **methodological advances**

Team

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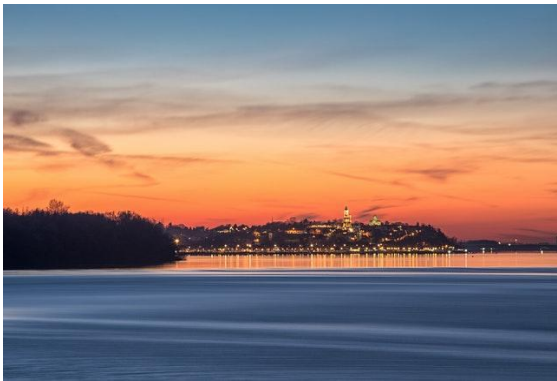
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много вам хвала and **I look forward** to your **questions**!

✉
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