The process of preparation a systematic review

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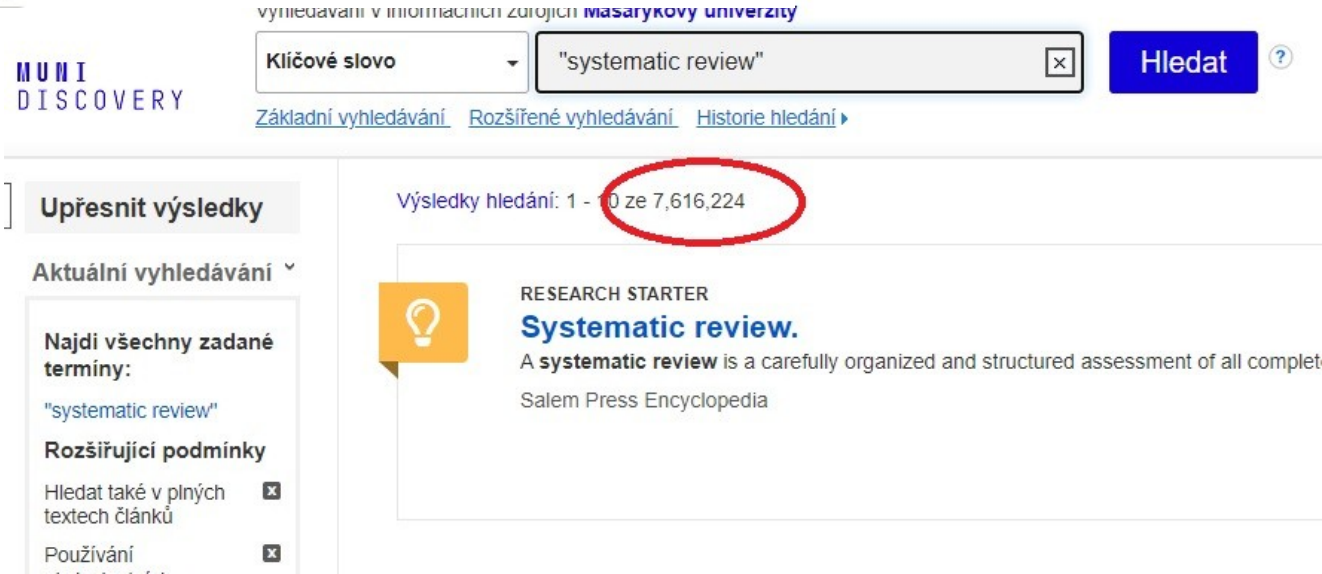
Systematické review

- type of literature review
- uses methodologies to collect and evaluate all available scientific evidence that meets predetermined criteria in order to answer a specific research question.
- The goal is to provide the most objective and comprehensive view of the topic.

Main steps

1. Question formulation – The definition of the research question that determines the objective of the review.
2. Protocol – Creation of a protocol that sets out the methodology of the review, including study inclusion criteria, search strategies and quality assessment methods.
3. Literature search – Systematic search for relevant literature in databases and other sources.
4. Study Selection – Selection of studies that meet predetermined criteria.
5. Data Extraction – Collection of data from selected studies.
6. Quality assessment – Assessment of quality and bias in selected studies.
7. Data synthesis – Analysis and synthesis of the data obtained. In the case of a quantitative review, it may include a meta-analysis.
8. Conclusion - Evidence-based presentation of results, findings and recommendations

Google Scholar
"systematic review"
Články
Přibližný počet výsledků: 2 630 000 (0,09 s)
Kdykoli
Od 2024
Od 2023
Od 2020
Vlastní období...
How to do a systematic review
A Pollock, E Berge - International Journal of Stroke, 2018 - journals.sagepub.com
... A systematic review aims to bring evidence together to ... different types and methods of systematic review for different types of ... A high quality systematic review will try to identify all ...
Uložit
Citovat
Počet citací tohoto článku: 424
Související články
Všechny verze (počet: 9)
Web of Science: 155


MUNI DISCOVERY
Klíčové slovo
"systematic review"
Hledat
Základní vyhledávání
Rozšířené vyhledávání
Historie hledání
Upřesnit výsledky
Aktuální vyhledávání
Najdi všechny zadané termíny:
"systematic review"
Rozšiřující podmínky
Hledat také v plných textech článků
Používání
Výsledky hledání: 1 - 10 ze 7,616,224
RESEARCH STARTER
Systematic review.
A systematic review is a carefully organized and structured assessment of all complet
Salem Press Encyclopedia

PRISMA

- PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is a methodological framework and set of guidelines designed to ensure transparency and quality in the processing of systematic reviews and meta-analyses.
- The purpose of PRISMA is to increase transparency and facilitate the critical evaluation and reproduction of systematic reviews and meta-analyses.

PROSPERO

- **https://www.crd.york.ac.uk/prospero/**
- international database of prospectively registered systematic reviews of medical and social interventions. The goal is to provide transparency and help limit potential data selection bias that may occur if protocols and methodologies are modified during or after data collection.

PICO a PECO

PICO and PECO - to facilitate the structuring and formulation of research questions, especially in the field of health and ecology, which is key to the design of systematic reviews and guidelines. These criteria help define clear and specific parameters that a research study should meet.

PICO

- **P (Population)**: The population or patients that the study focuses on. It defines who the study participants are.
- **I (Intervention)**: The intervention being investigated. This can be a medical procedure, drug, diagnostic test or other medical intervention.
- **C (Comparison)**: A comparison or control group that is used to compare the effects of an intervention.
- **O (Outcome)**: The outcome or consequence that is measured and investigated in the study.

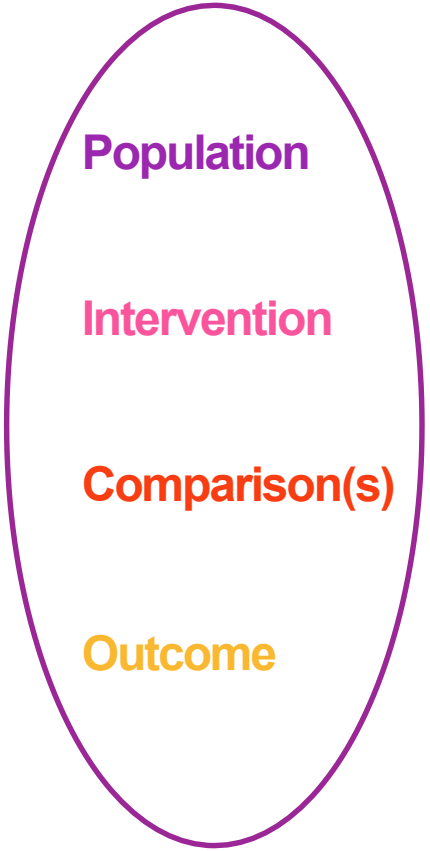
PECO

- **E (Exposure)**: Exposure or factor to which organisms are exposed.

PICO a PECO example

Stress response of professional esports players in live stage events: a systematic review

Participants/population
Esports professional and active participants in Esports live stage competitions.
Intervention (s) exposure (s)
Studies dealing with physiological, psychological and mental stress in Esports.
Comparator (s) control
A study comparing the degree of stress in professional Esports athletes compared to another part of the population.
Outcome (s)
Main outcomes - The main directions of stress research in Esports. The effects of stress on the health of athletes in Esports.
Additional outcomes - Missing research directions



Other tools, sw, apps

https://www.rayyan.ai/

A tool for creating a systematic review, quick and effective collaboration on the selection of studies that meet predetermined criteria, and to significantly streamline the literature screening process.

https://www.zotero.org/

Citation manager, import and export of records

Rayyan.ai

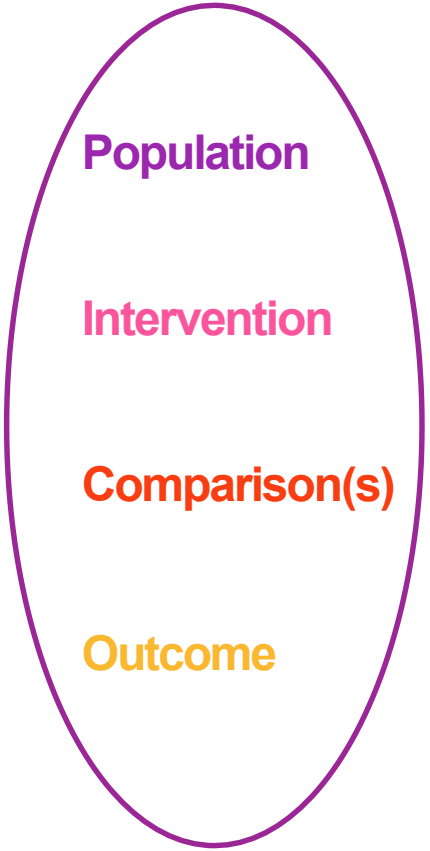
- **Import references**: import studies from Zotero, PubMed, Embase and others.
- **Deduplication**: identifies and removes duplicate records.
- **Double screening**: two independent reviewers assess the same studies without seeing each other's assessment, which helps eliminate bias.
- **Inclusion and exclusion of studies**: Reviewers can easily mark studies as included, excluded or unclear, and add notes and comments.
- **Collaboration**: online collaboration.
- **Output reports**: reports and statistics about the review process.

Example: BENEFITS OF ESPORTS

Student: Adam Červinka

https://is.muni.cz/auth/th/rrz4j/?lang=en;setlang=en

However, there are situations where the use of PICO or PECO criteria for systematic reviews may not be the most efficient. In our case, we did not use the PICO and PECO criteria due to the assumed diversity of topics, since we deal with esports, which is a broad and multidisciplinary topic, and the PICO/PECO criteria are limiting here. We can state that PICO and PECO are suitable for evaluating effects, especially for clinical or epidemiological studies. In our systematic review, we also focus on qualitative research and theoretical work. Additionally, we aim to explore complex or innovative research questions that cannot be easily accommodated within a traditional PICO or PECO framework. And a final reason why we did not use a typical procedure using PICO or PECO is that the criteria can lead to over-specificity, which limits the review's ability to include a wider range of relevant studies.



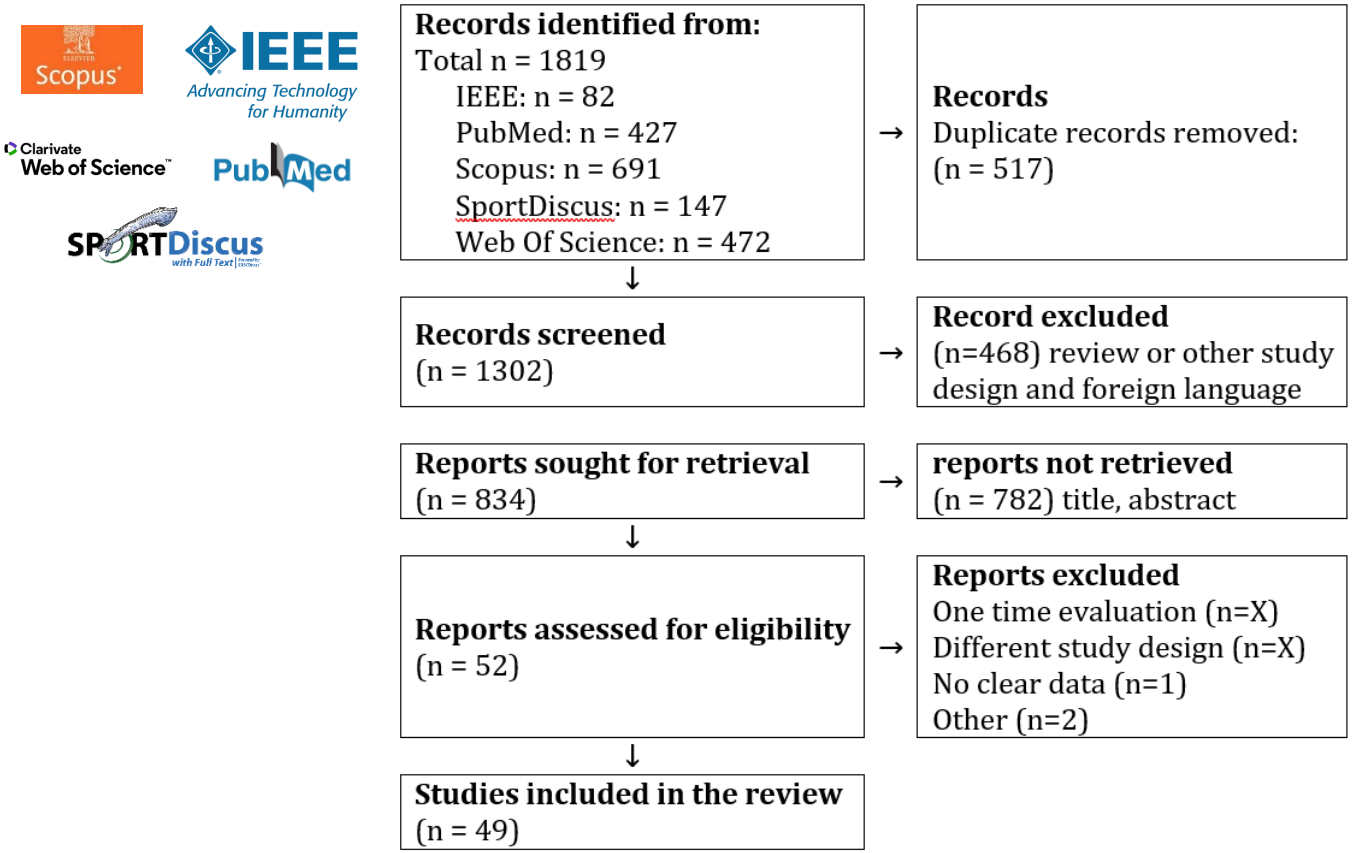
Search strategy and selection process

Database: MEDLINE (via the PubMed interface), SportDiscus, IEEE Xplore Digital Library (through EBSCOhost), and Web of Science during September 2023.

Searched record :
(esport* OR e-sport* OR "digital sport*" OR "electronic sport*" OR "online sport*" OR "virtual sport*") AND (advancements OR assets OR advantage OR benefit OR bonus OR favors OR gain OR merits OR perks OR plus OR positive OR profit OR provision OR privilege OR profits OR reward).

PubMed: MeSH terms

Table 1 - PRISMA flowchart for the study identification process



Quality of studies

Evaluation of the quality of studies according to criteria

Downs, S. H., & Black, N. (1998). The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *Journal of Epidemiology & Community Health*, *52(6)*, 377–384. https://doi.org/10.1136/jech.52.6.377

Final scores were converted to percentages and methodological quality was classified as follows: <45.4% “poor” methodological quality; 45.4–61.0%, “fair” methodological quality; >61.0%, “good” methodological quality (Kennelly, 2011)

1	studie ----->>	st01 - Hagiwara et al. (2020)	st02 - Hedlund (2019	st03 - Ruth et al. (2022)	st04 - Tabacof et al. (2021)
2	1. Is the hypothesis/aim/objective clearly described?	YES	YES	YES	YES
3	2. Are the main outcomes to be measured clearly described in the Introduction or Methods section?	YES	YES	YES	YES
4	3. Are the characteristics of the participants included in the study clearly described?	YES	YES	YES	YES
5	4. Are the interventions of interest clearly described?	YES	YES	YES	YES
6	5. Are the principal confounders compared clearly described?	NO	YES	NO	UD
7	6. Are the main findings of the study clearly described?	YES	YES	YES	YES
8	7. Does the study provide estimates of random variability provided for main outcomes?	YES	YES	YES	YES
9	8. Have the characteristics of patients lost to follow-up been described?	NO	YES	NO	YES
	9. Have the characteristics of patients lost to follow-up been				

Results – Esports benefits

- Cognitive & psychological benefits
- Social Benefits
- Educational and career benefits
- Physical Benefits

Results – Esports benefits

Table 25 - Physical benefits A

Author	Year	Measurements	Results	Physical benefits
Ersin et al.	2022	Auditory, visual, and aim reaction times	Significant differences in visual (p<.001) and aim (p<.001) reaction times between the groups, no significant difference in auditory reaction time (p=.397)	↑ energy expenditure compared to sitting, reaction times comparable to professional athletes, ↑ hand-eye coordination
Fletcher et al.	2020	Questionnaire on soft skills; Case studies based on anecdotal evidence	Increased communication and teamwork skills; positive impact on interpersonal relationships; increased confidence; interest in other team sports	Increased confidence, resilience, and interest in other team sports and computing-based activities
Kelly et al.	2021	Social connection measured on a 6-point Likert scale	Light/casual gaming may not significantly differ from non-gaming in terms of well-being outcomes and could offer benefits such as enhanced cognitive abilities and social networks online	an optimal well-being gamer profile reflects more recreational engagement, similar to traditional sports, ↑ well-being outcomes relative to non-gamers
Ketelhut et al.	2021		Exergames combine physical and cognitive activities	Exergames ↑ physical adherence and confidence in movement skills
Ningning & Wenguang	2023	Questionnaire (influence of eSports game experience on young people's intention to participate in sports and fitness)	E-gaming scenes, virtual sports experience, and social presence had a significant positive effect on the willingness to participate in sports and fitness	↑interest in physical sports and fitness

Interpretation of results

- General interpretation of results in the context of other evidence
- Implications for practice, the field, and future research
- Limits of the studies included in the research
- Limits of the systematic review procedure