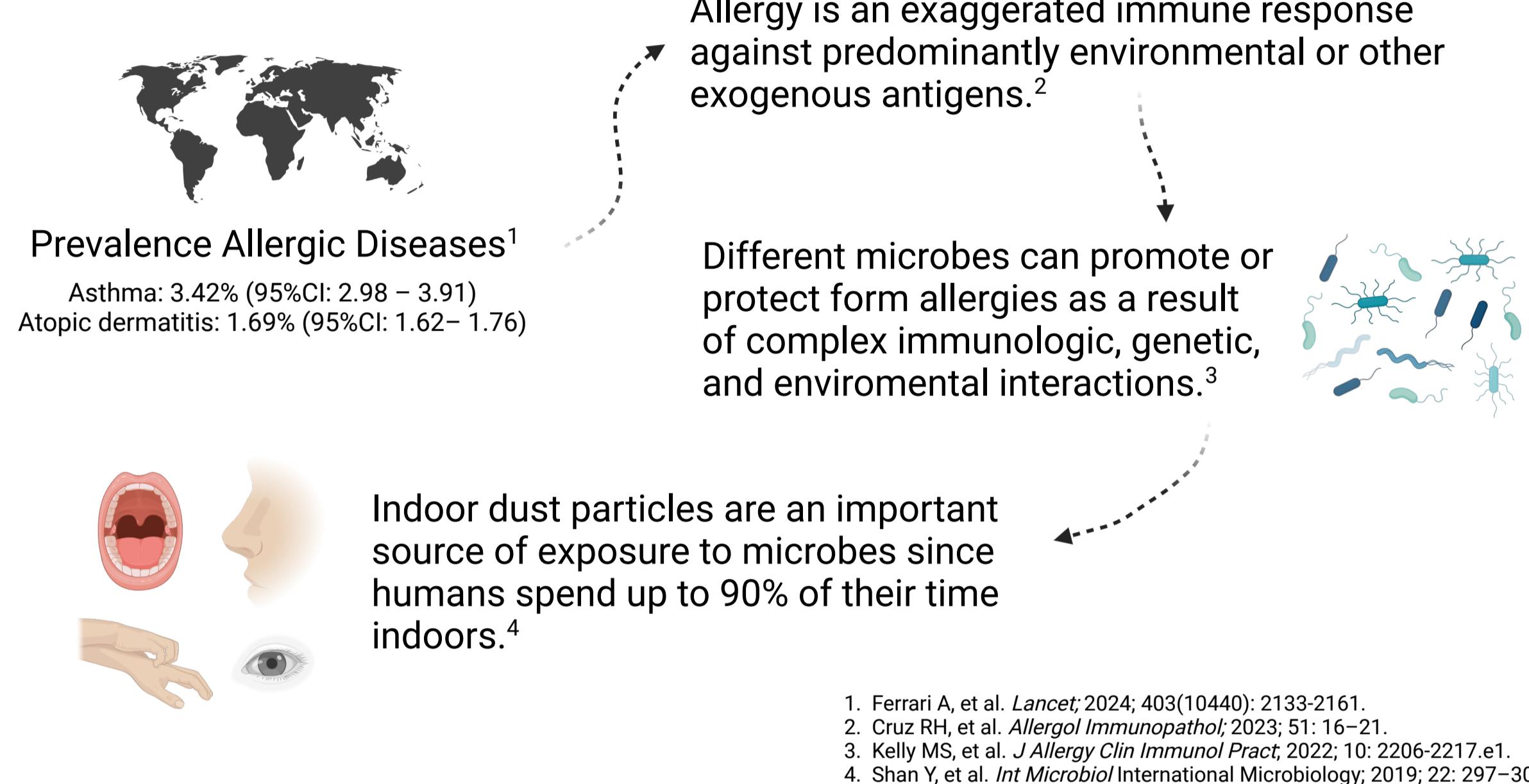




Indoor dust microbiota composition and allergic diseases: a scoping review to construct a reusable DAG

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Background



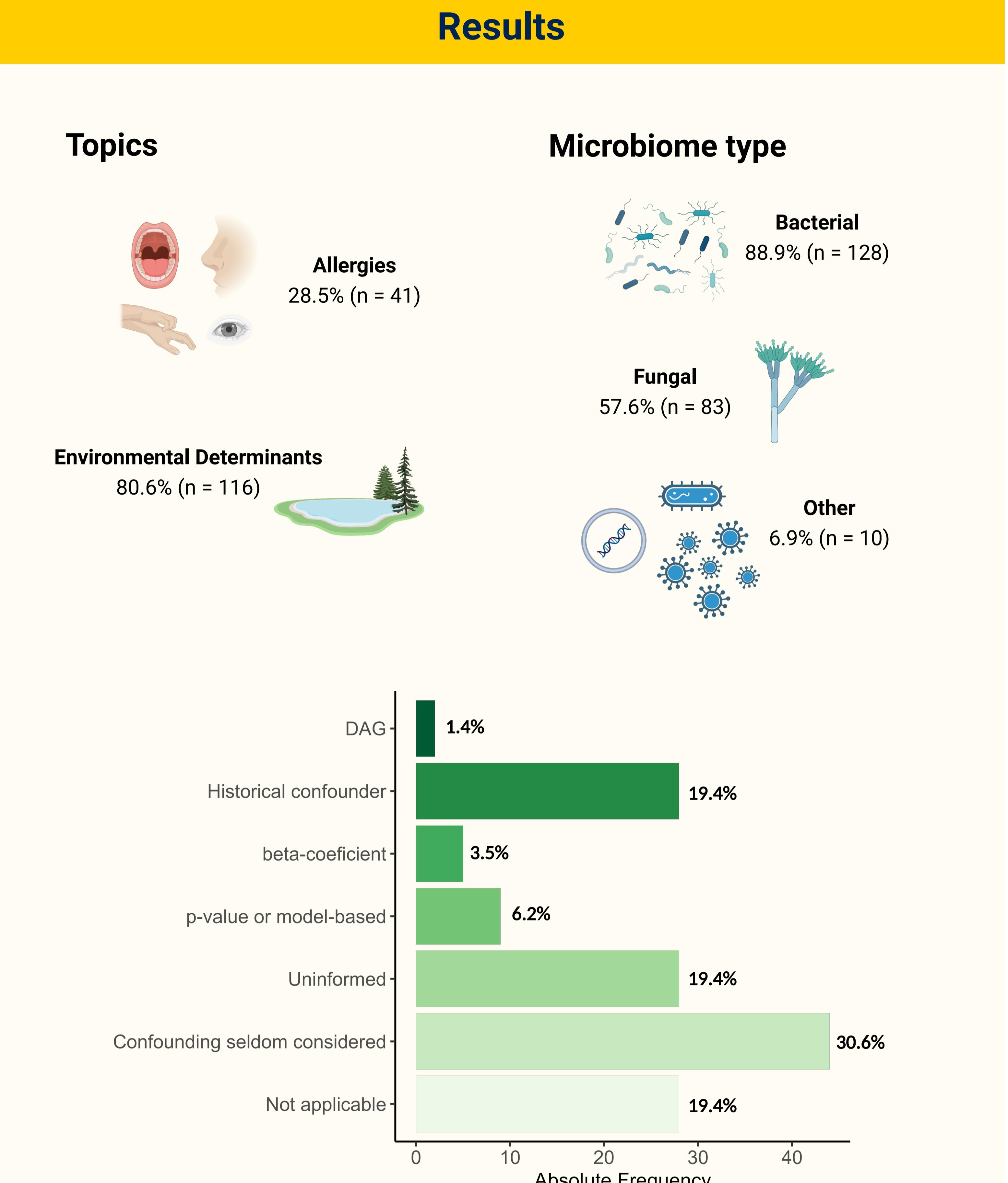
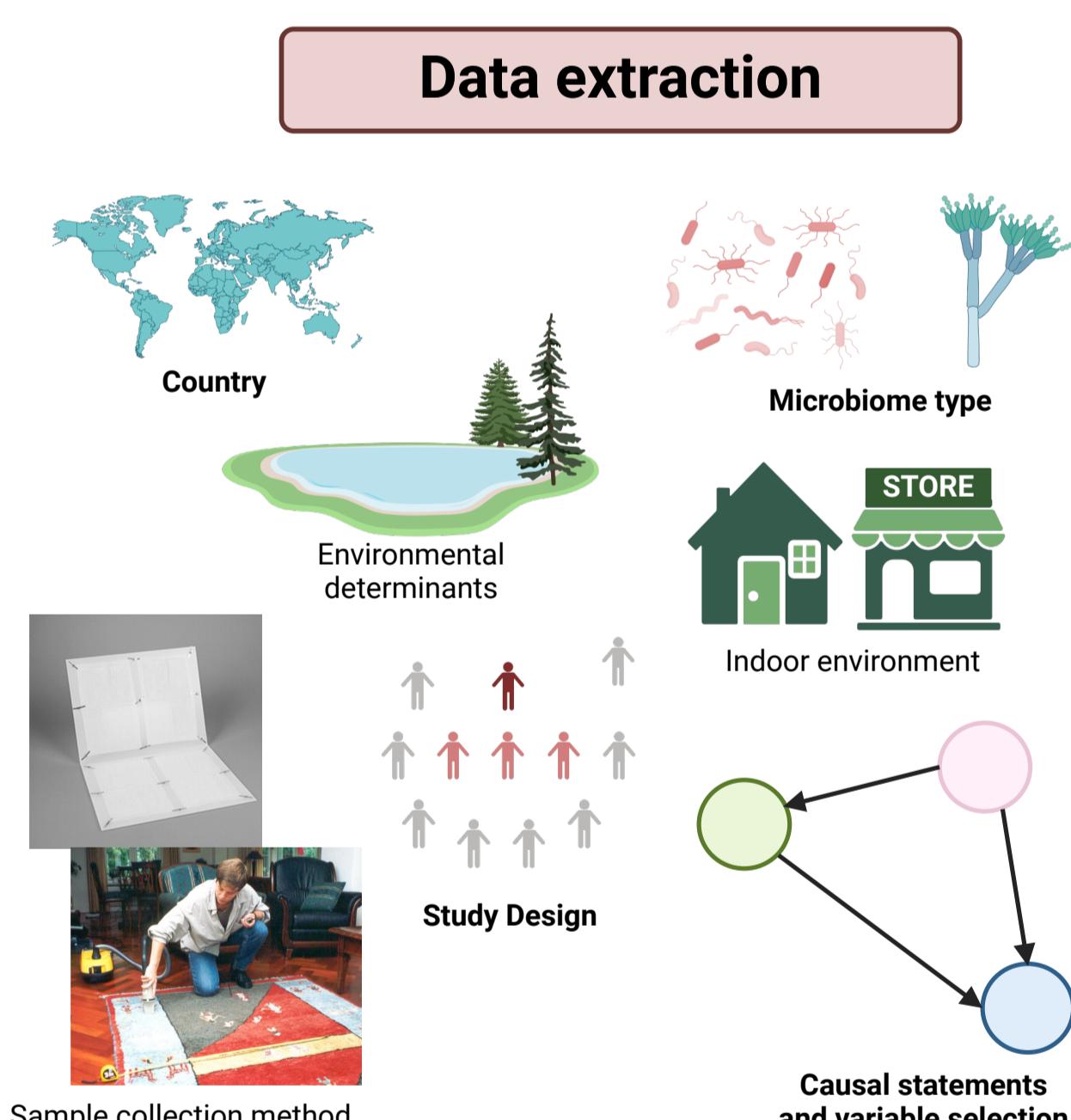
Objectives

- 1 Scope the characteristics of studies of the indoor dust microbiome
 - 2 Describe the study design, use of causal statements, and variable selection methods
 - 3 Construct an evidence-synthesis directed acyclic graph (DAG)⁵
indoor dust microbiome → allergies
5. Ferguson KD, et al. *Int J Epidemiol*. 2020;49:322-29

Methods

Search Strategy

- WorldCat.org and SciELO
- Keywords:
kw:(dust) AND kw:(indoor OR dwelling OR house OR household OR residence OR store OR mall OR hospital OR workplace OR office OR school OR university OR sport OR closed environment) AND kw:(microbiota OR microbiome OR microbial community OR virome)
- initial (08-03-2023), updated: 15-09-2023 and 30-01-2024
- English and Spanish
- 2000-2024



Mapping

Num 1 (Fu et al., 2023)

- Exposure: microbial richness/concentration
- Outcome: allergic rhinitis / non-allergic rhinitis symptoms
- Control variables: gender, current smoking, and parental asthma
- Other: Effect of relative humidity and dust weight on rhinitis symptoms is concluded to be mediated through the microbiome.

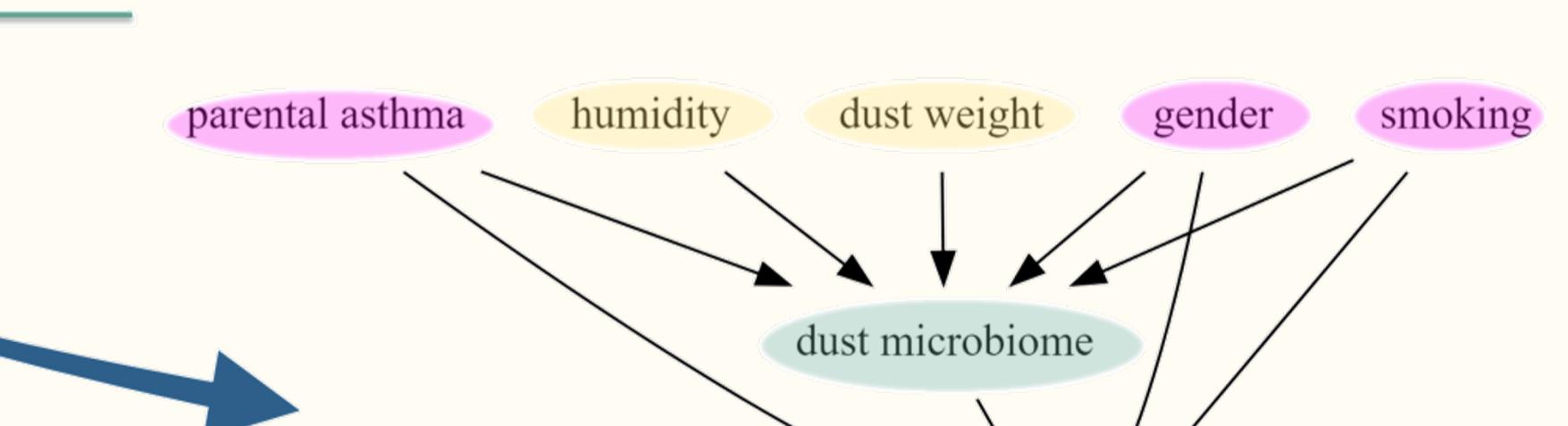


Figure 2. Example of mapping procedure of a single study into an implied graph. A total of 23 implied graphs will be constructed in order to synthesize them into a reusable directed acyclic graph.

Conclusions and outlook

- Directed acyclic graphs (DAG), which are the preferred method for controlling of confounding in observational studies, have been underused in studies of the indoor dust microbiome making causal statements.
- The construction of well-documented, reusable, and adaptable DAG may increase the use of this method in studies of the indoor dust microbiome, for which mediation analysis may be of particular interest.