

Self-perception of sleep quality and indoor air quality: preliminary findings from HypnosAir study

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NO CONFLICT OF INTERESTS

HypnosAIR

Understanding the impact of air quality
on sleep quality considering an integrated
human exposure approach



RATIONAL

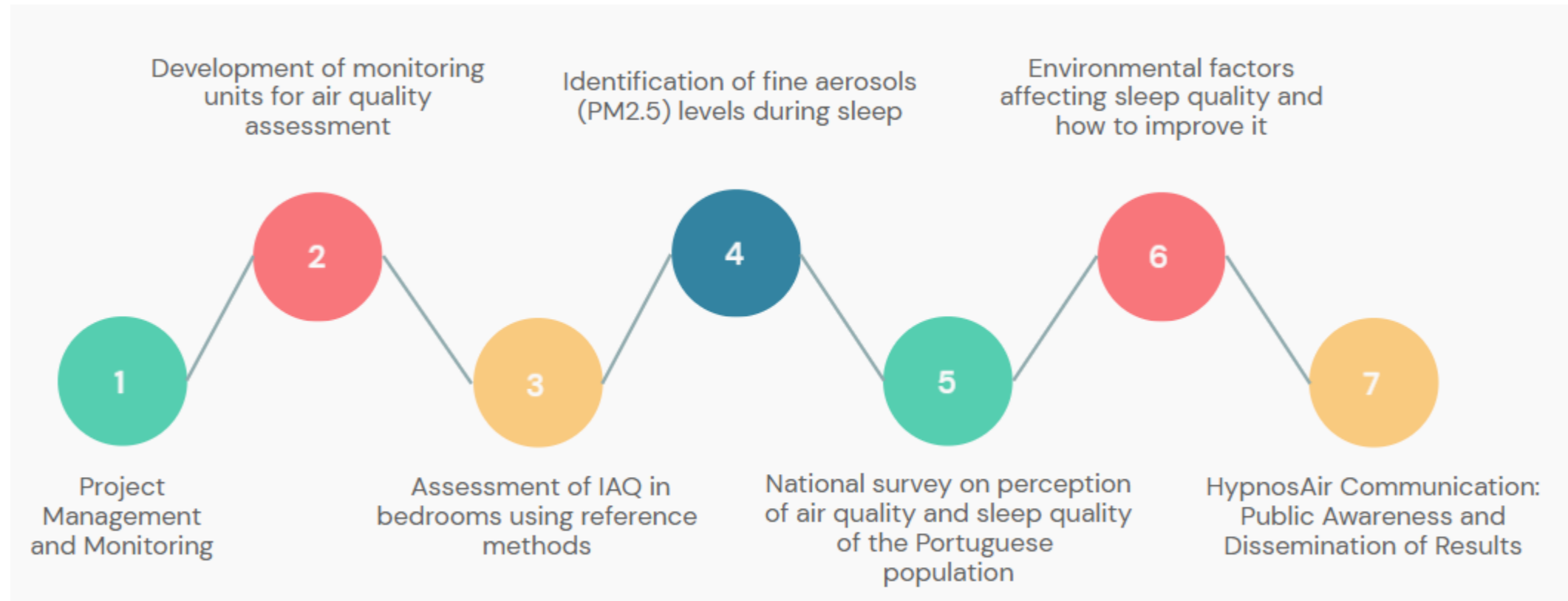
Sleep plays an importance role for essential body functions, individuals' welfare, health and daily productivity ¹.

Sleep structure is vulnerable to several features that include both pathophysiology processes and environmental influences ¹.

Typically, sleeping environments are characterized by low ventilation rates², leading to pollutants accumulation ^{3,4}.

Adding to this, the breathing zone is very close to potential sources of pollutants, as the mattresses and bed sheets^{5,6}.

1. Assefa, S. Z et al. "The functions of sleep." 2015 2. Canha N, et al. "Impact of biomass home heating, Cooking Styles, and Bread Toasting on the Indoor Air Quality at Portuguese Dwellings: A Case Study. 2018 3. Canha N, et al. "Assessment of ventilation and indoor air pollutants in nursery and elementary schools in France". 2016 4. Viegas C, et al. "Bioburden in sleeping environments from Portuguese dwellings. 2021 5. Kemmler S, et al. "Emissions of organophosphate and brominated flame retardants from selected consumer products and building materials. 2003 6. Spilak MP, et al. "Impact of bedding arrangements, pillows, and blankets on particle resuspension in the sleep microenvironment. 2014.



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Aim: describe and characterize the sleep
and sleep environment perception of the
Portuguese population

METHODS



- Online survey
- Portuguese adults (>18 years)
- Dissemination Strategies: email, direct contact and social media
-
- Data from March to May (n=505)

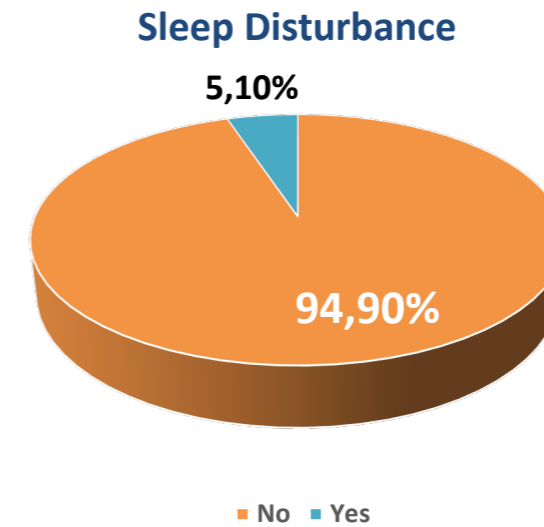
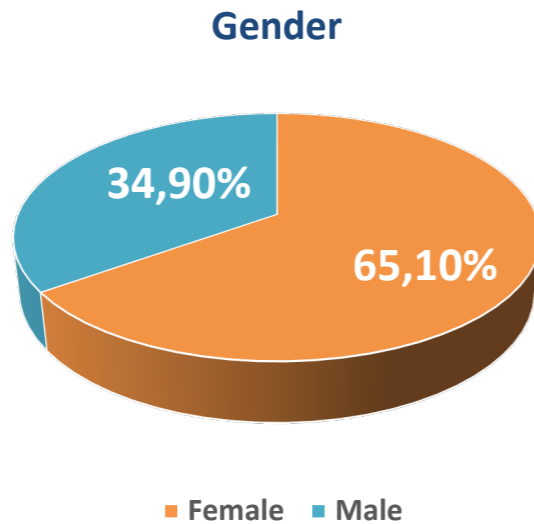
- Sleep Hygiene Index⁷, Pittsburgh Sleep Quality Index⁸, Epworth Sleepiness Scale⁹
- Self-perceived indoor and outdoor environmental aspects were assessed through individual questions



7. Mastin, D.F et al. "Assessment of sleep hygiene using the Sleep Hygiene Index."2006 8. Buysse, D.J. "The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research."1989 9. Johns, M,W. "A new method for measuring daytime sleepiness: the Epworth sleepiness scale."1991

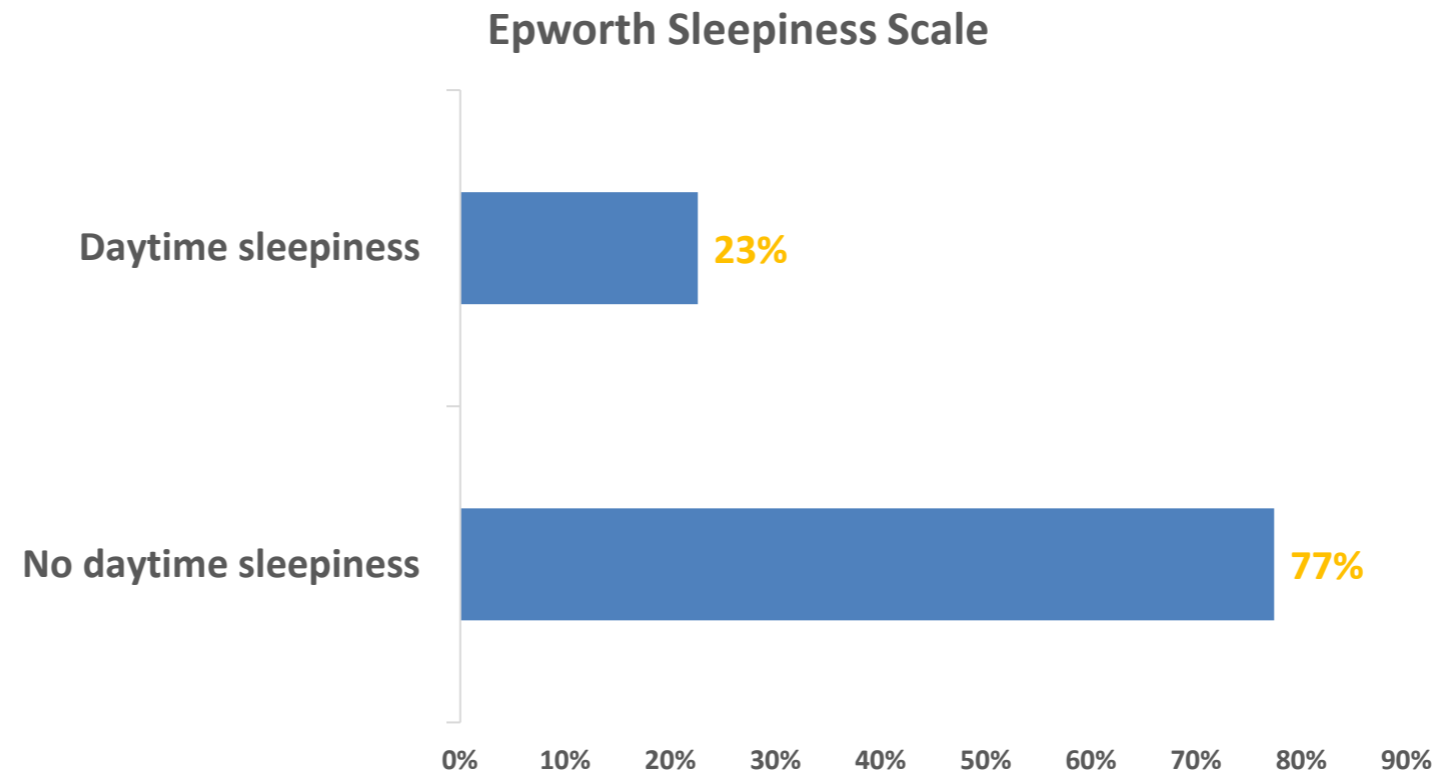
RESULTS | sample characteristics

- Age: $42,2 \pm 4,12$ years



RESULTS | Sleep Assessment – Daytime Sleepiness

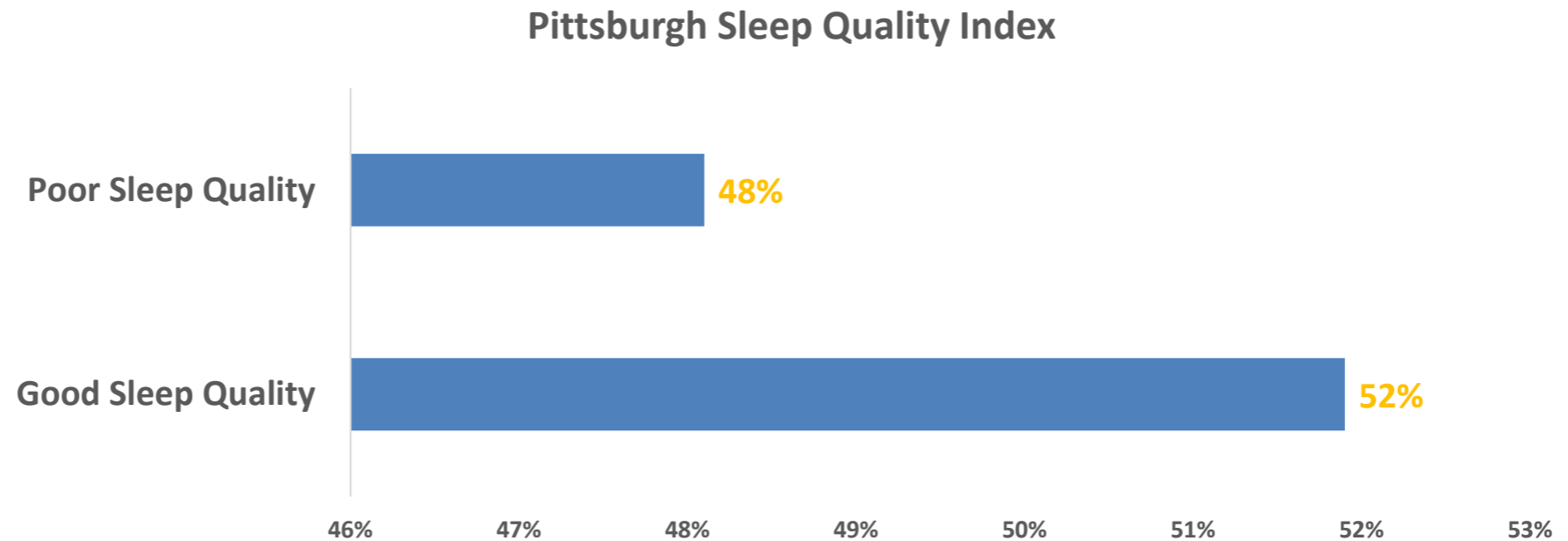
Mean (\pm sd) = 6,7 \pm 3,96



Qualitative score | cut off= 10 point

RESULTS | Sleep Assessment – Sleep Quality

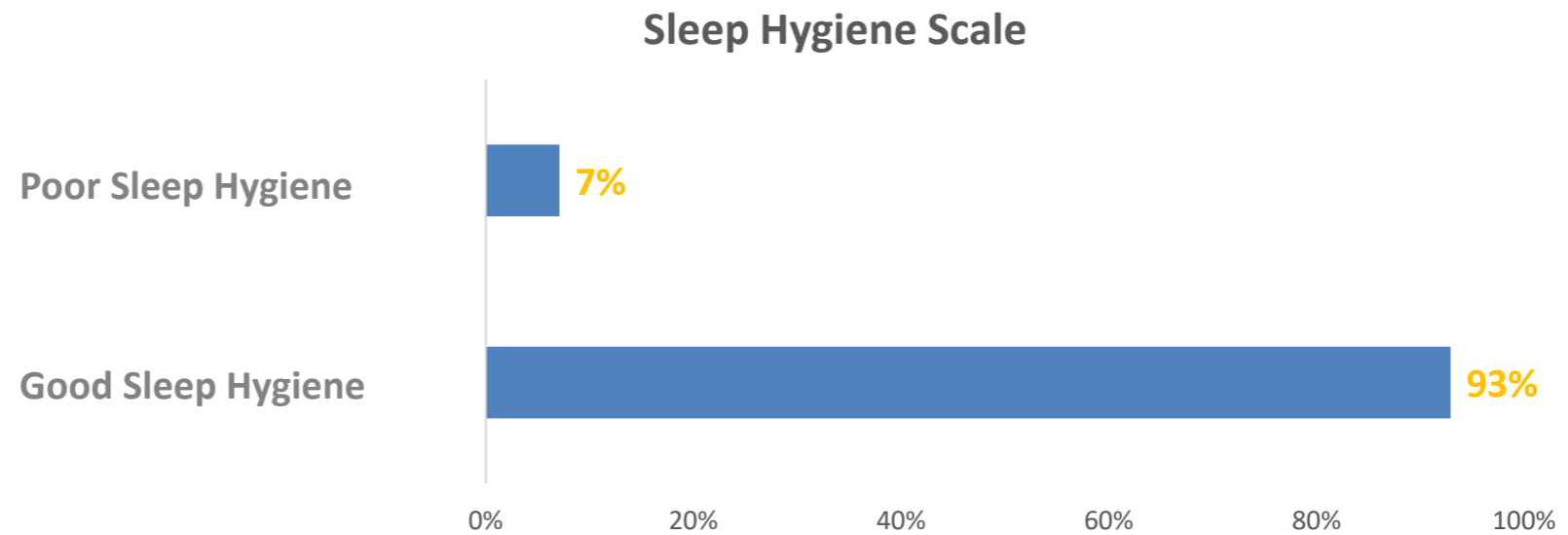
Mean (\pm sd) = $5,9 \pm 2,97$



Qualitative score | cut off= 5 point

RESULTS | Sleep Assessment – Sleep Hygiene

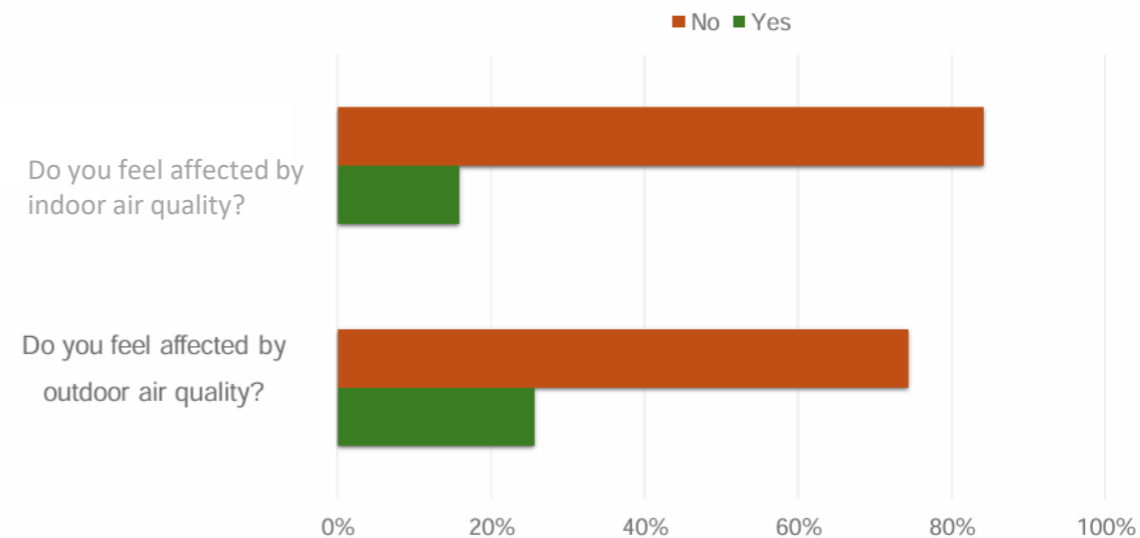
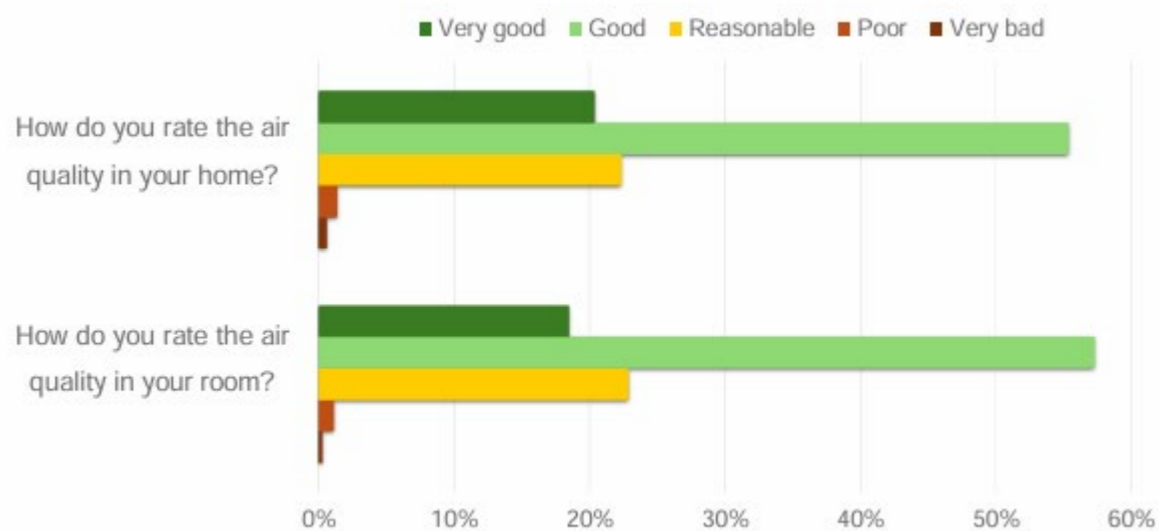
Mean (\pm sd) = 18,3 \pm 9,27



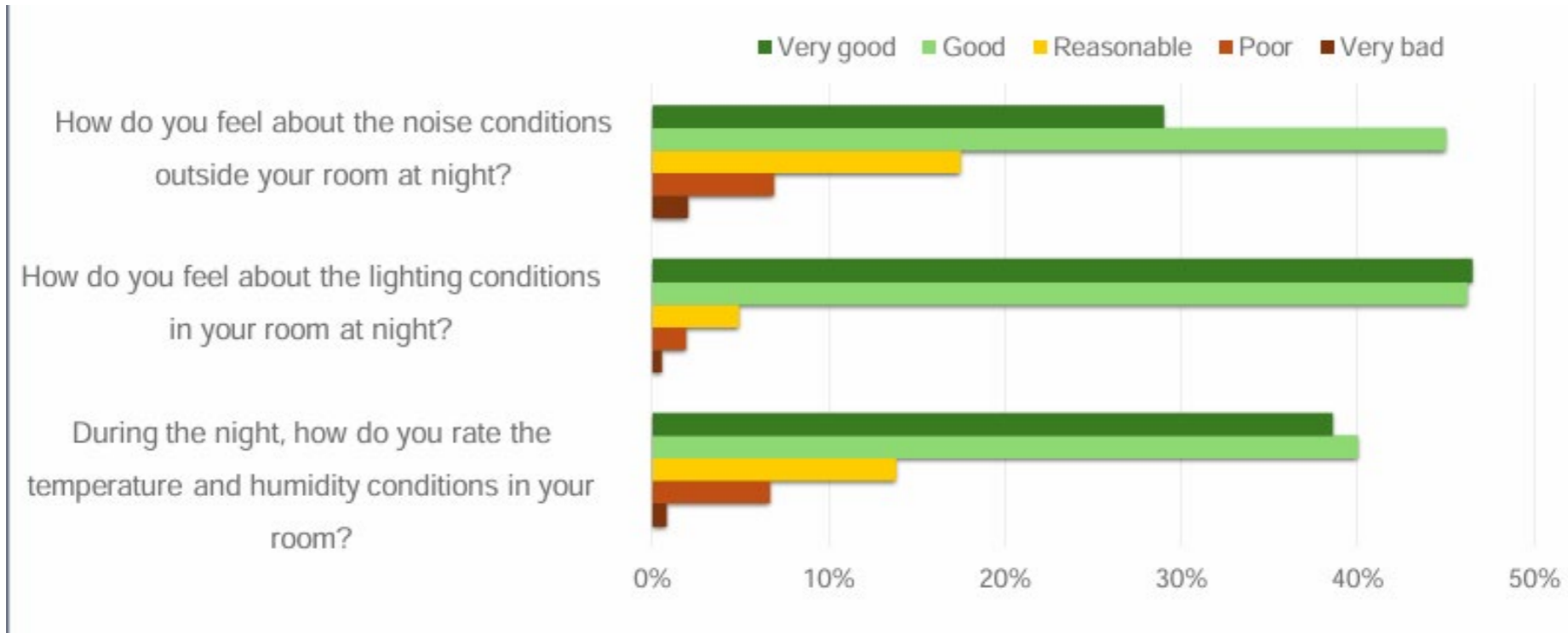
Qualitative score | cut off= 36 point^{10,11}

10. Mahadule, A.A. et al. "Sleep quality and sleep hygiene in preclinical medical students of tertiary care center amidst COVID-19 pandemic: a cross-sectional observational study." 2022 11. Brick, C.A. et al. "Association between sleep hygiene and sleep quality in medical students." 2010

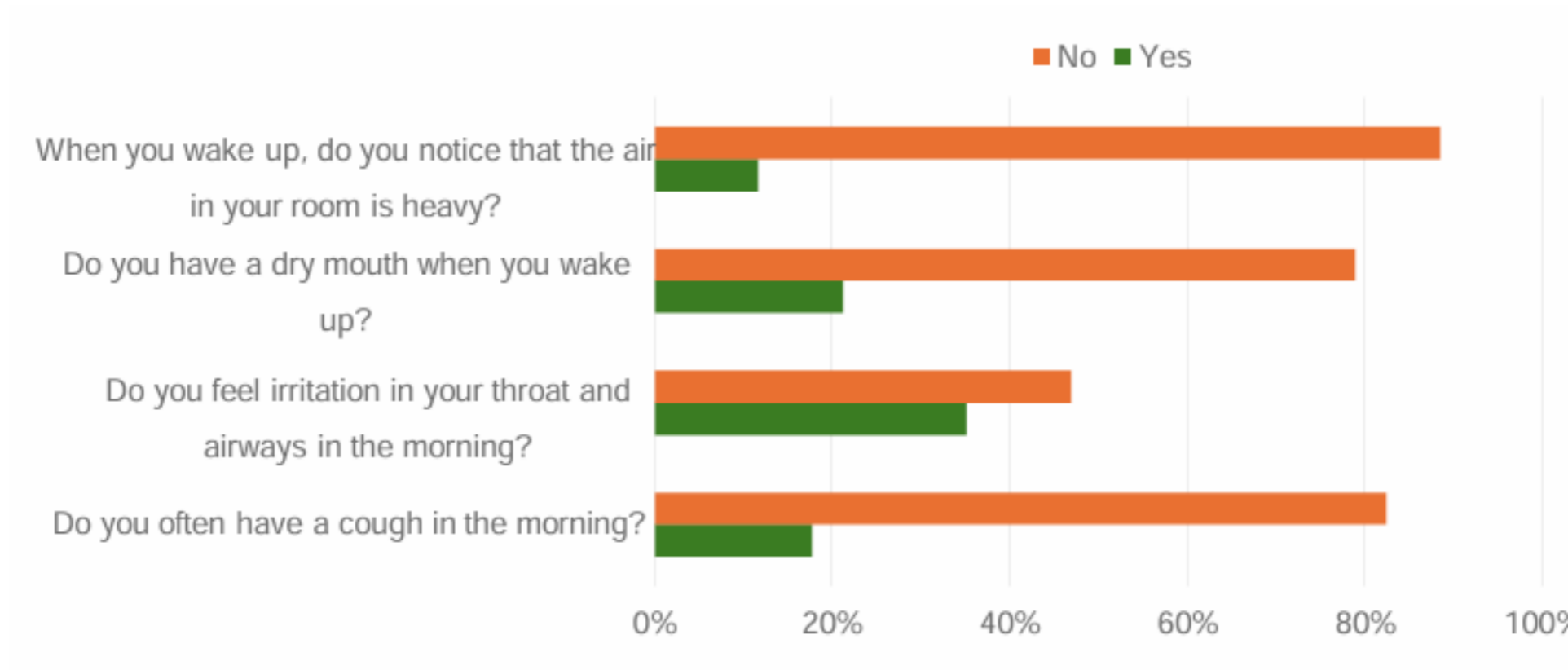
RESULTS | Sleep Environment Perception



RESULTS | Sleep Environment Perception



RESULTS | Sleep Environment Perception



FINAL CONSIDERATIONS

Main Conclusions:

- $\frac{1}{4}$ of the sample presented daytime sleepiness
- $\frac{1}{2}$ of the sample presented poor sleep quality
- Majority of the sample presented good sleep hygiene habits
- The sleep environment was not identified as a problem

Limitations:

- These findings are not representative of the Portuguese population
- Convenience sample

Future perspectives:

- Increase the number of participants in order to meet the final objectives of the HypnosAir project
- Correlations with objective data



- Questionnaire available until June 2025
- Representative sample of Portuguese population:
 - Sociodemographic data
 - Sleep data
 - Environmental data





HypnosAIR

Participe no estudo HypnosAIR

Perceção da qualidade do sono e da qualidade do ar

Faça parte





OBRIGADA PELA VOSSA ATENÇÃO!

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