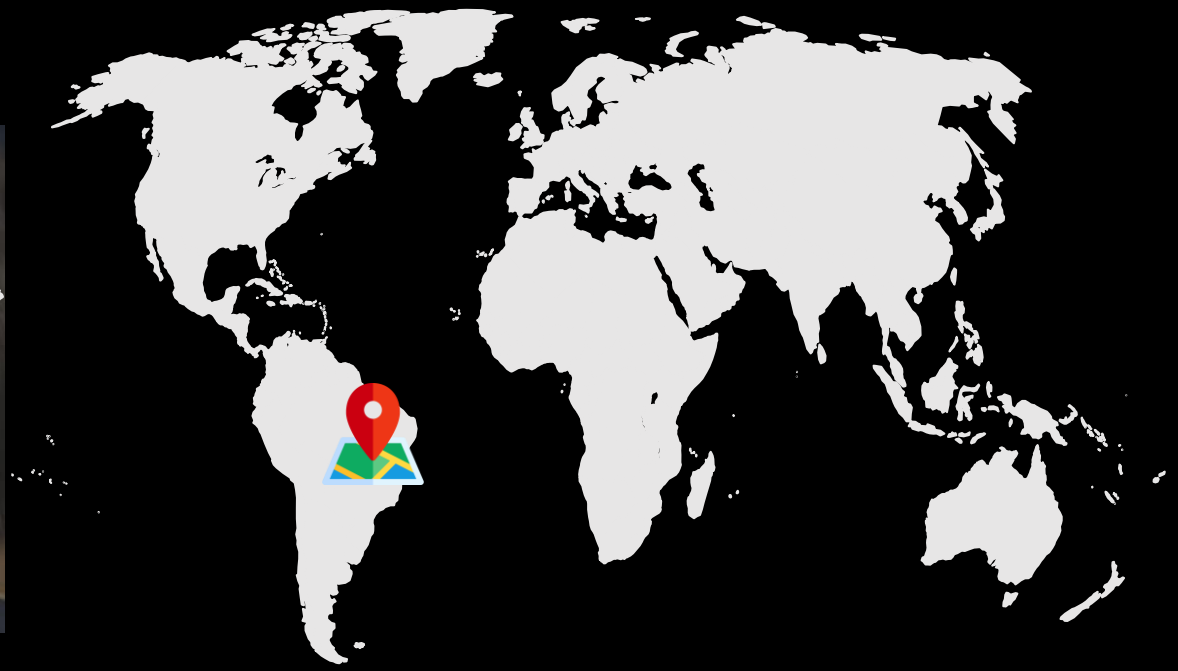


Prevalence and Socio-Demographic factors related to Back Pain Among adults in Brazil: an analysis of the cross-sectional population-based study *National Health Survey* (2019)

Antonio Andrade

andradefisio97@gmail.com

INTRODUCTION

*"An unpleasant sensory and emotional experience associated with, or resembling that associated with, **actual** or **potential** tissue damage.";*

(Raja et al., 2020)

✓It is the defining feature for many disease diagnosis;

(low back || neck pain)

(Henschke et al., 2015)

- ✓Pain can lead to disability;
- ✓Disability can be defined as "*any short term or long term health loss*"; (Vos et al., 2010)
- ✓Back pain can cause disability;
- ✓The **number of people** experiencing **low back and neck pain** in low-income and middle-income countries **is likely to increase** dramatically over the coming decades; (Hoy et al., 2014)
- ✓The overall increase in the global burden of low back pain is almost entirely due to **population increase** and **ageing** in both high-income, low-income and middle-income countries. (Hoy et al., 2010)

✓Disability can cause ↑costs;

✓In 2016 **in USA**, low back and neck pain occuped the first place in health care spending rank, consuming **134.5 billions dollars** (67.9 % was estimated for the age-group 20-64) (Dieleman et al., 2020)

✓In Brazil, **low back and neck pain are the first cause of "Years Lived with Disability"** (GBD 2016 Brazil Collaborators ([Lancet 2018; 392: 760–75])

✓People living with low back pain have diverse problems as *psychological*, *social*, *biophysical*, *comorbidities*, and *pain-processing mechanisms* that impact on both the pain experience and the associated disability; (Hartvigsen et al., 2018)

AIMS

The aims of this presentation is to provide an up-to-date descriptive epidemiology of back pain in Brazilian adults and to analyze sociodemographic characteristics associated with back pain.

MATERIAL AND METHODS

- ✓Cross-sectional study “National Health Survey – 2019” (NHS-2019-BR) in Brazil;
- ✓NHS-2019-BR it´s a research did by Brazilian Ministry of Health and the Brazilian Institute of Geography and Statistics;
- ✓NHS-2019-BR data collection took place between August 2019 and March 2020 (Stopa et al., 2020)
- ✓The NHS-2019-BR was submitted to the National Research Ethics Commission (CONEP)/National Health Council and approved in August 2019 under No. 3,529,376 for the 2019 edition

(https:// www.pns.icict.fiocruz.br/aspectos-eticos/ accessed on 19/August/2021)

- ✓In 2019, 108,525 households were selected, totaling a final sample of **90,846 individuals** aged 15 or over, and a response rate of 96.5%;

- ✓Individuals included in **this presentation** are with **18 years +**

(https://www.gov.br/saude/pt-br/composicao/vigilancia-em-saude-svs/inqueritos-de-saude/pesquisa-nacional-de-saude)

- ✓ Participants were classified as having a Chronic Back Pain if they answered “YES" to the following question:

"Do you have any chronic back problems, such as chronic back or neck pain, low back pain, sciatica, vertebrae or disc problems?"

STATISTICAL ANALYSIS

Prevalence (%) and respective confidence intervals (95% CI) were estimated for participants classified as having a **chronic back pain problem**.

All analyzes were performed using the “R” software (RStudio), predominantly using the “PNSIBGE” package.

RESULTS

✓In 2019, approximately 21.6% of people aged 18 or over (approximately 34.3 million) reported a chronic back pain in Brazil;

- The mean age of participants with chronic back pain (regardless of sex) was 51.18 years old (95% CI: 50.84 – 51.56)

♂ 50.10 years (95% CI: 49.54 – 50.65)

♀ 51.90 years (95% CI: 51.41 – 52.39)

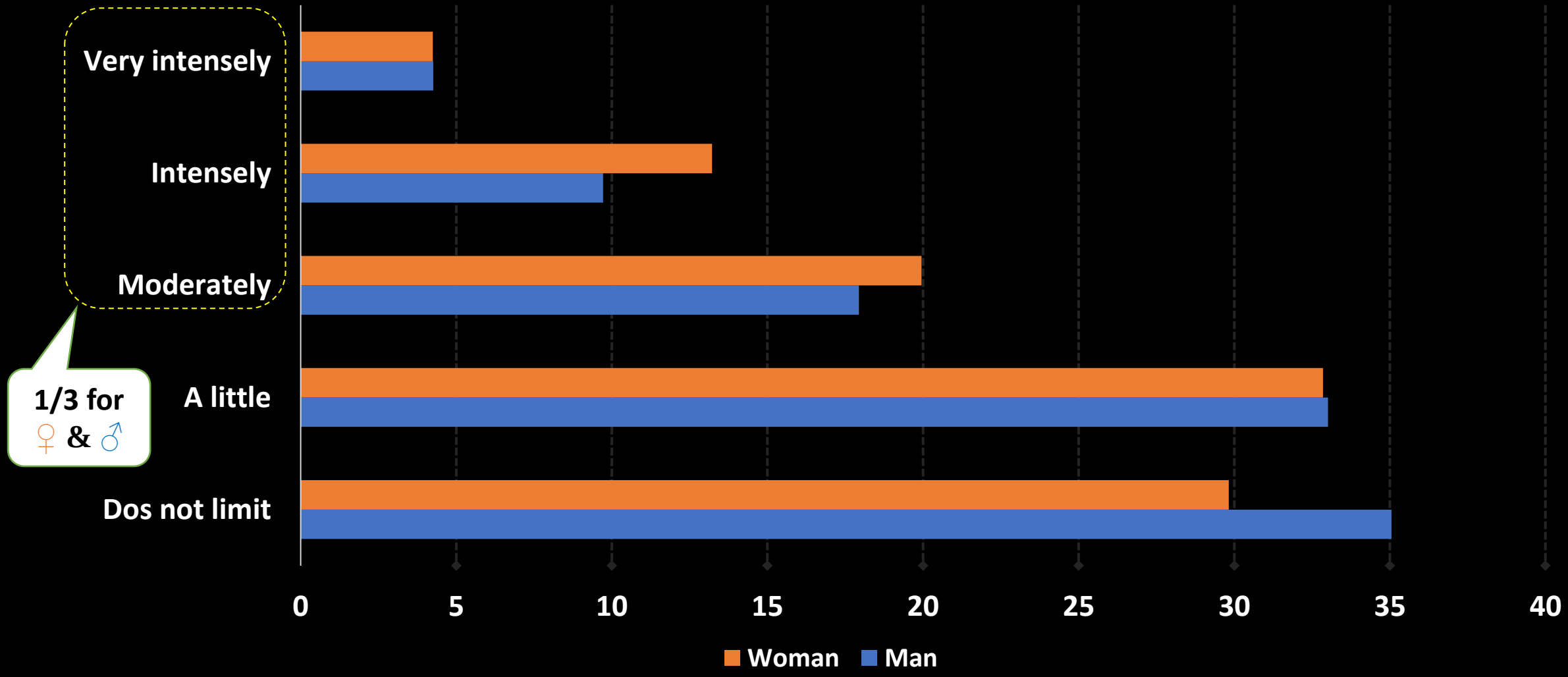
Chronic Back Pain

18.30%
(95%CI: 17.63-18.97)

24.46%
(95%CI: 23.74-25.18)

Esta Foto de Autor Desconhecido está licenciado em CC BY

Functional Disability



Variables	Categories	2019	
		Man	Woman
		Prevalence % (95% CI)	Prevalence % (95% CI)
Sex		18.30 (17.63-18.97)	24.46 (23.74-25.18)
Age (years)	18 a 24	7.80 (6.37-9.22)	10.86 (9.36-12.36)
	25 a 34	11.31 (9.93-12.69)	14.58 (13.26-15.91)
	35 a 44	16.50 (15.16-17.83)	21.41 (19.82-23.01)
	45 a 54	23.59 (21.96-25.23)	28.69 (26.87-30.52)
	55 a 64	27.59 (25.60-29.58)	34.47 (32.61-36.33)
	65 +	25.10 (23.45-26.74)	35.87 (34.13-37.61)
Race	White	17.96 (16.90-19.01)	25.47 (24.35-26.58)
	Black	17.38 (15.76-19.00)	24.26 (22.32-26.20)
	Yellow	22.88 (11.66-34.10)	22.13 (14.88-29.38)
	Brown	18.78(17.78-19.79)	23.59 (22.59-24.59)
Marital status	Unmarried	14.34 (13.38-15.30)	19.53 (18.55-20.52)
	Married	20.98 (20.03-21.93)	26.00 (24.79-27.21)
	Divorced/separated	23.77 (20.89-26.66)	28.64 (26.37-30.92)
	Widowed	23.77 (20.00-27.53)	34.14 (32.14-36.15)
Area	Urban	17.61 (16.84-18.37)	24.29 (23.51-25.08)
	Rural	22.01 (20.75-23.28)	25.68 (23.92-27.43)

BMI categories	Underweight	17.22 (0.67-33.76)	11.50 (2.02-20.98)
	Normal weight	17.69 (13.42-21.95)	21.54 (16.99-26.09)
	Overweight	18.90 (15.48-22.32)	28.51 (22.93-34.10)
	Obese	18.59 (12.42-24.77)	28.84 (24.07-33.60)
Self-rated health	Very good	9.65 (8.25-11.05)	11.28 (9.81-12.75)
	Good	14.18 (13.31-15.05)	17.70 (16.80-18.60)
	Fair	28.53 (27.09-29.96)	34.83 (33.53-36.12)
	Poor	44.48 (40.66-48.29)	49.95 (46.79-53.11)
	Very poor	39.79 (32.12-47.45)	56.94 (51.01-62.88)
Educational level	No studies/ Incomplete Primary	25.62 (24.41-26.82)	32.40 (31.08-33.72)
	Full Primary / Incomplete Secondary	15.65 (13.51-17.79)	22.97 (20.56-25.39)
	Full secondary / Incomplete university	11.50(9.23-13.77)	17.41 (14.60-20.21)
	University	16.06 (14.21-17.91)	20.48 (18.94-22.01)
Physical activities or sports in the last 3 months		15.38 (14.45-16.31)	23.23 (21.95-2451)
Physical activities (150'/week)	Active	17.60 (14.84-20.37)	23.48 (20.78-26.19)
	Sedentary	15.01 (14.01-16.03)	22.87 (21.42-24.31)

Functional disability	Dos not limit	35.05 (33.03-37.07)	29.82 (28.18-31.47)
	A little	33.01 (31.11-34.91)	32.85 (31.25-34.45)
	Moderately	17.94 (16.31-19.57)	19.85 (18.46-21.24)
	Intensely	9.72 (8.50-10.95)	13.22 (12.08-14.37)
	Very Intensely	4.26 (3.48-5.05)	4.25 (3.62-4.88)
Depression		32.64 (29.23-36.04)	43.19 (40.91-45.47)
Another mental diseases		26.10 (22.47-29.73)	39.86 (36.92-42.80)
Diabetes		24.02 (21.37-26.66)	36.43 (33.82-39.05)
Hypertension		26.67 (25.11-28.24)	36.93 (35.35-38.50)
CPOD		31.31 (25.25- 37.38)	45.02 (37.21-52.83)
Arthritis		49.18 (43.86- 54.49)	56.71 (54.42-59.00)
Work-related musculoskeletal disorders		47.67 (40.78-54.57)	52.33 (47.55- 5712)
Hard physical activity at home		21.84(19.63-24.04)	28.48 (26.80-30.15)
Hard physical activity at work		19.74(18.35-21.13)	28.45 (26.01-30.88)
Chronic disease (physic or mental) + 6 months		24.98 (20.34-29.62)	35.09 (31.30-38.87)
Health insurance	Yes	17.74 (16.21-1927)	25.93 (24.54-27.33)
	No	18.50 (17.77-19.23)	23.90 (23.10-24.70)

DISCUSSION & CONCLUSION

✓ Among the main findings, we can mention:

- 1/5 (21.6%) of the adults 18 years + have Chronic Back Pain in Brazil;

  "N" it is ↑

- Higher prevalence of chronic back pain in woman;

- <u>High prevalence with increasing age</u>;

  Population is aging in low and middle-income countries

By 2050, it is estimated that 3.5 billion people 40 years of age or older will be living in low-income and middle-income countries compared to 645 million people living in high-income countries. (Kelly et al., 2008)

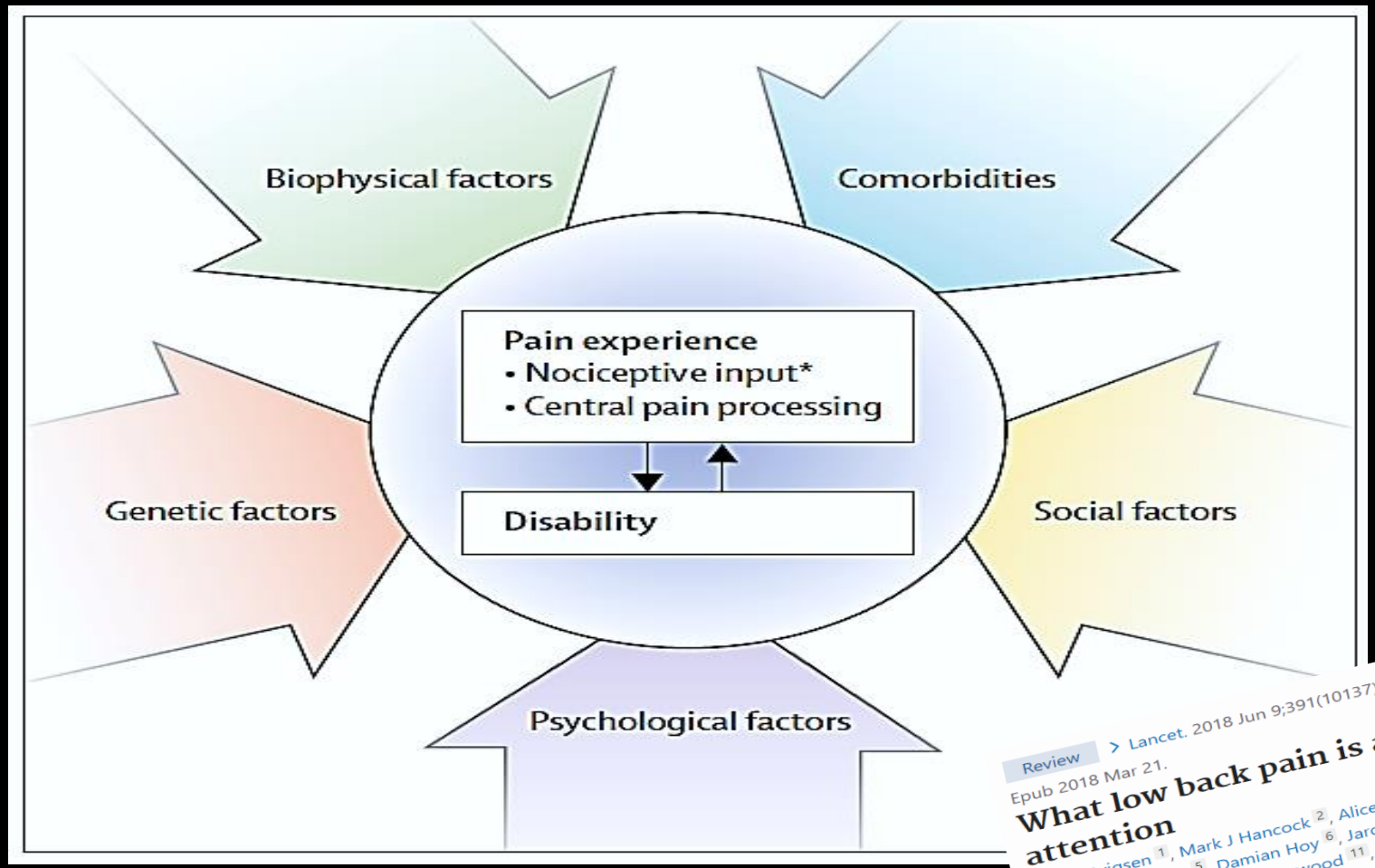
- Data show that *1/3* of people affected by chronic back pain have **functional disability** ranging from moderate to very intense;

- In low and middle-income countries health promotion and treatment services do not receive the resourcing seen in high-income countries, and health insurance and social security do not commonly exist. A large proportion of those affected are in their most productive years of life

(Hoy et al., 2014)

- The study provide data for several age groups (18 to 65+ years old);
- Very poor self-rated health status has a high prevalence of chronic back pain;
- Low educational level has higher prevalence of chronic back pain;
- Depression, another mental diseases, arthritis, work-related musculoskeletal disorders and chronic diseases (physic or mental 6 months +) has higher prevalence of back pain.

Tackling back pain in Brazil need



Review > Lancet. 2018 Jun 9;391(10137):2356-2367. doi: 10.1016/S0140-6736(18)30480-X. Epub 2018 Mar 21.

What low back pain is and why we need to pay attention

Jan Hartvigsen [1], Mark J Hancock [2], Alice Kongsted [1], Quinette Louw [3], Manuela L Ferreira [4], Stéphane Genevay [5], Damian Hoy [6], Jaro Karppinen [7], Glenn Pransky [8], Joachim Sieper [9], Rob J Smeets [10], Martin Underwood [11], Lancet Low Back Pain Series Working Group

Limitations:

✓This study considered the point prevalence (1 year or lifetime prevalence?);

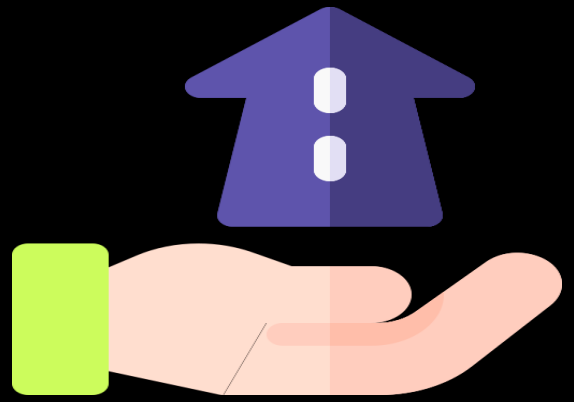
✓Although it was demonstrated the functional disability, it would be interesting investigate the work absence too;

✓Pain intensity would be interesting for future studies;

Although methodological issues are inherent in population-based research on chronic back pain, this study provides data on prevalence estimated in the general population

Future directions:

- ✓ Do models of regression analyses for estimating the relationships between the 'outcome' chronic back pain and 'predictors' or 'features'.



Thank you !!!

References

- RAJA, S. N. et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. Pain, v. 161, n. 9, p. 1976-1982, 2020.

- Comitê de ética PNS 2019: (https:// www.pns.icict.fiocruz.br/aspectos-eticos/ accessed on 19/August/2021)

- (https://www.gov.br/saude/pt-br/composicao/vigilancia-em-saude-svs/inqueritos-de-saude/pesquisa-nacional-de-saude)

- Gabriel Assuncao and Luna Hidalgo (2021). PNSIBGE: Downloading, Reading and Analysing PNS Microdata. R package version 0.1.5. https://CRAN.R-project.org/package=PNSIBGE

- Henschke N, Kamper SJ, Maher CG. The epidemiology and economic consequences of pain. Mayo Clin Proc. 2015 Jan;90(1):139-47. doi: 10.1016/j.mayocp.2014.09.010. PMID: 25572198.

- Vos T, Flaxman AD, Naghavi M, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012;380(9859):2163-2196.

- Hoy DG, Smith E, Cross M, Sanchez-Riera L, Blyth FM, Buchbinder R, Woolf AD, Driscoll T, Brooks P, March LM. Reflecting on the global burden of musculoskeletal conditions: lessons learnt from the global burden of disease 2010 study and the next steps forward. Ann Rheum Dis. 2015 Jan;74(1):4-7. doi: 10.1136/annrheumdis-2014-205393. Epub 2014 Jun 9. PMID: 24914071.

- GBD 2016 Brazil Collaborators. Burden of disease in Brazil, 1990-2016: a systematic subnational analysis for the Global Burden of Disease Study 2016. Lancet. 2018 Sep 1;392(10149):760-775. doi: 10.1016/S0140-6736(18)31221-2. Epub 2018 Jul 20. PMID: 30037735; PMCID: PMC6123514.

- Dieleman JL, Cao J, Chapin A, Chen C, Li Z, Liu A, Horst C, Kaldjian A, Matyasz T, Scott KW, Bui AL, Campbell M, Duber HC, Dunn AC, Flaxman AD, Fitzmaurice C, Naghavi M, Sadat N, Shieh P, Squires E, Yeung K, Murray CJL. US Health Care Spending by Payer and Health Condition, 1996-2016. JAMA. 2020 Mar 3;323(9):863-884. doi: 10.1001/jama.2020.0734. PMID: 32125402; PMCID: PMC7054840.

- Hoy D, March L, Brooks P, Woolf A, Blyth F, Vos T, Buchbinder R. Measuring the global burden of low back pain. Best Pract Res Clin Rheum 2010; 24: 155–65.

- GBD 2016 Brazil Collaborators. Burden of disease in Brazil, 1990-2016: a systematic subnational analysis for the Global Burden of Disease Study 2016. Lancet. 2018 Sep 1;392(10149):760-775. doi: 10.1016/S0140-6736(18)31221-2. Epub 2018 Jul 20. PMID: 30037735; PMCID: PMC6123514.

- Hartvigsen J, Hancock MJ, Kongsted A, Louw Q, Ferreira ML, Genevay S, Hoy D, Karppinen J, Pransky G, Sieper J, Smeets RJ, Underwood M; Lancet Low Back Pain Series Working Group. What low back pain is and why we need to pay attention. Lancet. 2018 Jun 9;391(10137):2356-2367. doi: 10.1016/S0140-6736(18)30480-X. Epub 2018 Mar 21. PMID: 29573870.