Walking speed of older people and pedestrian crossing time

- Mobility is an important ability to allow an independent life. It is not different for older individuals.
- Decrease in walking speed

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Mobility is an important ability to allow us an independent life. It is not different for older individuals.

- Ageing process
- Decrease in walking speed

Source: Satario et al., 2014.
Fig 1. Pedestrian deaths (n=328) by age group in São Paulo, 2016.

- 80 year or +: 8.2%
- 70 - 79: 13.1%
- 60 - 69: 13.4%
- 50 - 59: 16.8%
- 40 - 49: 13.4%
- 30 - 39: 14.6%
- 20 - 29: 11.9%
- 10 - 19: 4.3%
- 0 - 9 Years: 4.3%

n= 114 (33.2%)

Source: Sao Paulo Company of Traffic Engineer (CET-SP), 2017.
Perdizes: neighborhood with high prevalence of the elderly.
In Sao Paulo, the crossing time for pedestrians is regulated according to the crosswalk distance.

- 1.2 m/s - Green light
- 1.4 m/s - Red light

Perdizes: neighborhood with high prevalence of the elderly.

These standards do not address the needs of the elderly population!
Objective

The aim of this study was to assess the walking speed of older people living in São Paulo, in terms of their ability to comply with the two international standards that regulate pedestrian crossing lights.

- 0.9 m/s (3.0 feet/sec) in Barcelona
- 1.1 m/s (3.6 feet/sec) in New York
Methods

Cross-sectional study with representative sample of older individuals (60y +) living in São Paulo.

Walking speed was the main outcome of this study.

Participants were asked to walk three meters at their normal pace, we recorded the time required to realize this activity.

Socio-demographic characteristics, health perception, self-reported non-communicable diseases (diabetes, arterial hipertension, COPD, stroke, depression and arthrosis), Functional limitation (ADL and IADL), Grip Strength (19.7kg for women; 33.3kg for men).

Statistical Analysis:
The descriptive assessment of walking speed across covariates used the Rao-Scott Chi-Square. Logistic regression models assessed unadjusted and adjusted associations between the walking speed and covariates. We considered sampling weights and the structured, complex sample design.
Results

What is the prevalence of older adults that cannot walk at the speed regulated by pedestrian crossing time?

Who walks at a slower pace??

95.7% → 1.1 m/s
69.7% → 0.9 m/s
Results

Women, light-skinned blacks (mixed), poorly educated individuals and those with poor health conditions were more likely to walk at a slower pace than is required by traffic lights at the pedestrian crossings in the city.

What can we do about these results?

Are we talking just about older adults??
Limitations

The walking speed was assessed at normal pace, what could be different from a speed used to cross streets. However, even with a natural acceleration in relation with restricted time for pedestrians, there is also a preparation (biologic and psychological) and anxiety mediating the action and influencing the walking speed of older adults.
Conclusions

Most of older adults cannot cross streets at their own walking speed in São Paulo. Therefore, there is an urgent need for modifying the traffic environment to prevent accidents involving vulnerable pedestrians and promote urban mobility.
Social and Public Health Impacts

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98% dos idosos não conseguem atravessar a rua no tempo dos semáforos
Estudo destaca que mudanças simples garantiriam mobilidade e maior autonomia para a população de idosos em São Paulo

Tempo de semáforo vai ficar 20% maior em São Paulo
Hoje, sinais paulistanos estão sincronizados para que pedestre percorra 1 metro de via a cada 12 segundos; zona leste terá primeira mudança

SÃO PAULO - A Companhia de Engenharia de Tráfego (CET) vai aumentar em 20% o tempo de travessia dos semáforos para pedestres da capital paulista. A medida ainda não tem data para começar, mas os primeiros semáforos que devem mudar ficam na Avenida Mateo Bebi, zona leste, histórica via de mortes por atropelamento. A medida foi anunciada nesta terça-feira, 2, pelo secretário de Transportes, Sérgio Avéleda, como parte do Maio Amarelo, mês de segurança no trânsito.
Thank you!!
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