New Intervention Models for Older Adults

Reducing time spent in sedentary activities

Madalena Gomes da Silva, PhD
Departamento de Fisioterapia, ESS-IPS

Emerging challenges of physiotherapy research and practice
FCM-UNL 2015

Plan for the session

1. The problem
2. Is this a problem?
3. Possible way out
4. Current projects
5. The future and your collaboration

The problem

Older people, in Portugal present a predominant pattern of sedentary activity

Regardless of known benefits, physical activity engagement declines with advancing age

Resende de Oliveira et al (2010); IDP (2011); Alves, J. 2012; Romão, M. 2012; Gomes Ferreira, R. 2014; Pleis JR, Lethbridge-Cejku M. 2006

Is it really a problem?

Sedentary lifestyles aggravate the physiological effects of the natural aging process

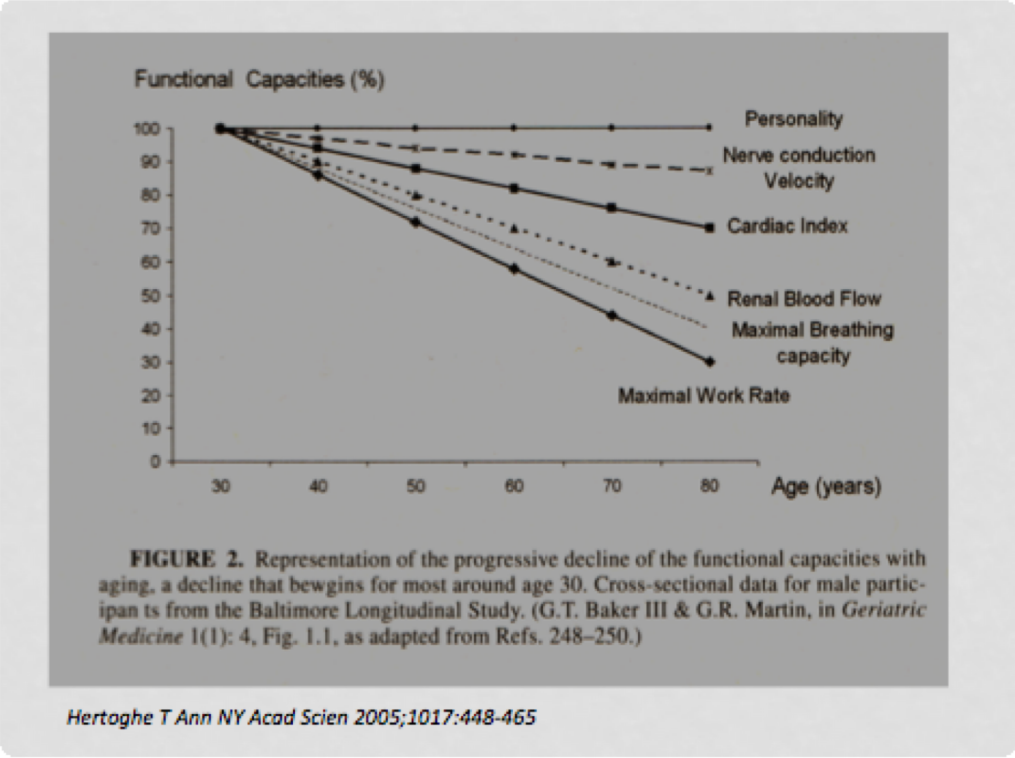


FIGURE 2. Representation of the progressive decline of the functional capacities with aging, a decline that bewgins for most around age 30. Cross-sectional data for male partic-ipan ts from the Baltimore Longitudinal Study. (G.T. Baker III & G.R. Martin, in *Geriatric Medicine* 1(1): 4, Fig. 1.1, as adapted from Refs. 248–250.)

Hertoghe T Ann NY Acad Scien 2005;1017:448-465

- Decreased physical abilities (strength, balance, rom, among others) are associated with relevant functional outcomes and vulnerability to disease (Romão & Gomes da Silva, 2012; Ferreira & Gomes da Silva, 2014)

- Physical activity may reduce vulnerability to several clinical conditions (physical and mental) (Vogel et al 2009; Reiner et al 2013)

- And it can be started at a later stage in life…

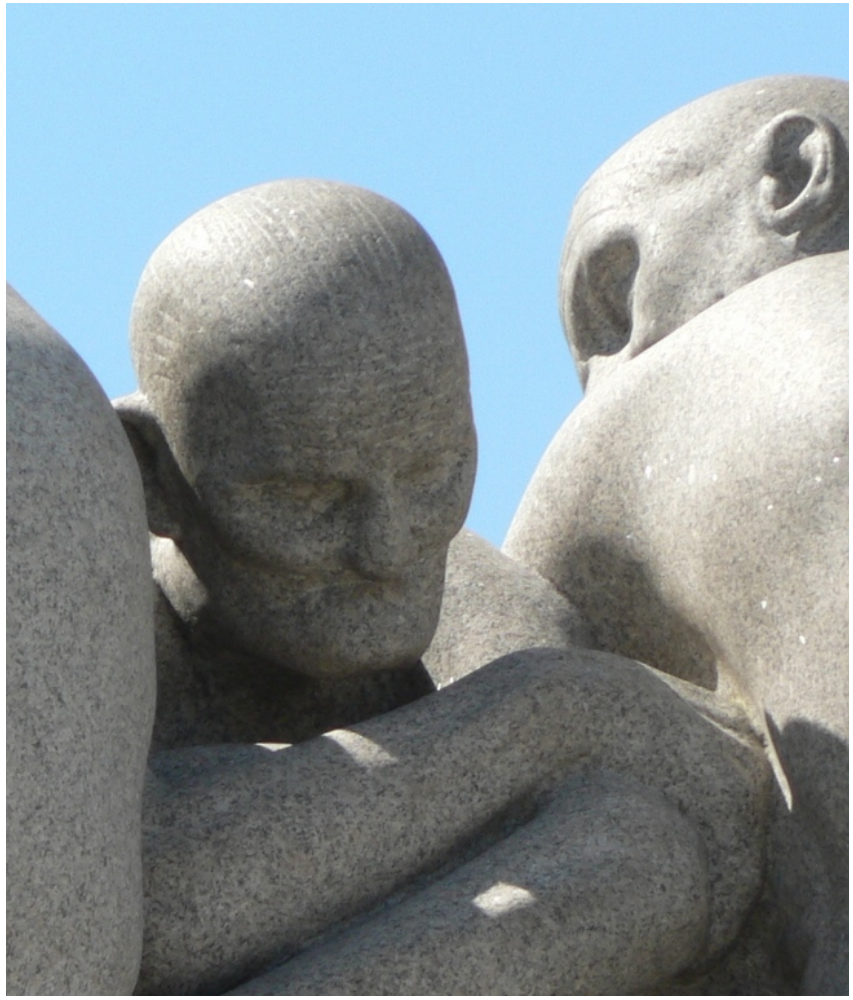
https://www.facebook.com/video.php?v=979998758691265&pnref=story

- Sedentary activities are significantly associated with lower odds of successful ageing among older adults, potentially in a dose-dependent manner
  (Alves et al 2012; Dogra et al 2012; Lee & Shiroma 2014)

… regardless of the physical activity level

other models are needed…

- Individually tailored (Biedenweg et al 2013; Muller &Khoo 2014)
- Home based on one's own routines (Welmer et al 2012; Muller & Khoo 2014)
- Monitored and quantified (Howcroft et al 2013; Lee & Shiroma 2014)



Steps to get to new model…

- Adjustment of the LiFE model (Lifestyle Integrated Functional Exercise @home) Clemson et al 2010; Clemson et al 2012)
- Mobile Sensing (Mansi et al 2014)
- Relevant outcomes (Ginne-Garriga et al 2013; Kendrick et al 2014)

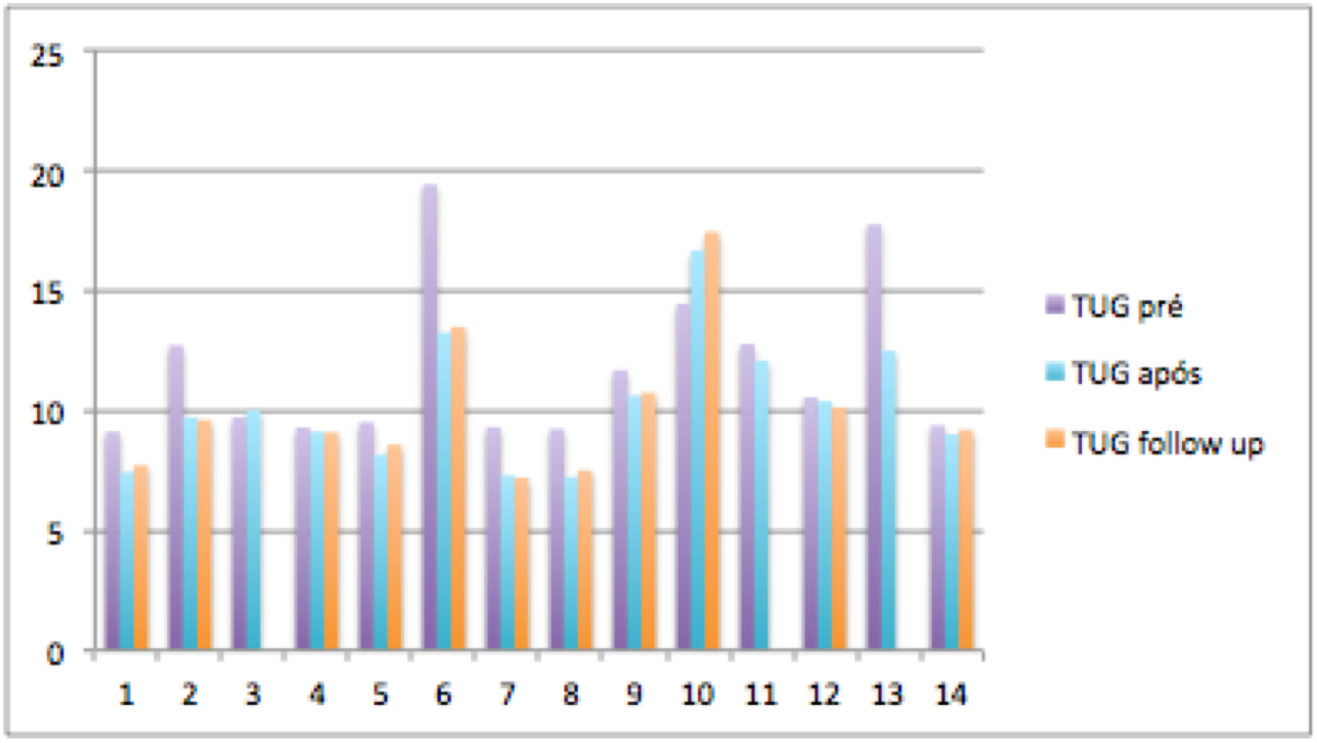
A - Adjustment of the LiFE Programme

Preliminary data without mobile sensing

- 14 case studies
- outcomes assessed have been related to falls: risk of falling (TUG); lower limb strength (chair stand); cardio-respiratory resistance (2' walk test); balance (4 items of Fullerton Balance scale); physical activity levels (YPAS)
- 12 weeks intervention - 4 weeks follow up

The LiFE Programme

1. 12 week intervention
2. individually tailored – respecting the same principles
3. physical activity diary - format being studied
4. Education - materials and left with families – strategy according to the behaviour change model suited
5. 4 weeks with 3 visits/week + 4 weeks with 2 visits/week + 1 phone call + 2 weeks with 1 visit/week + 2 phone calls + 2 weeks with 1 phone call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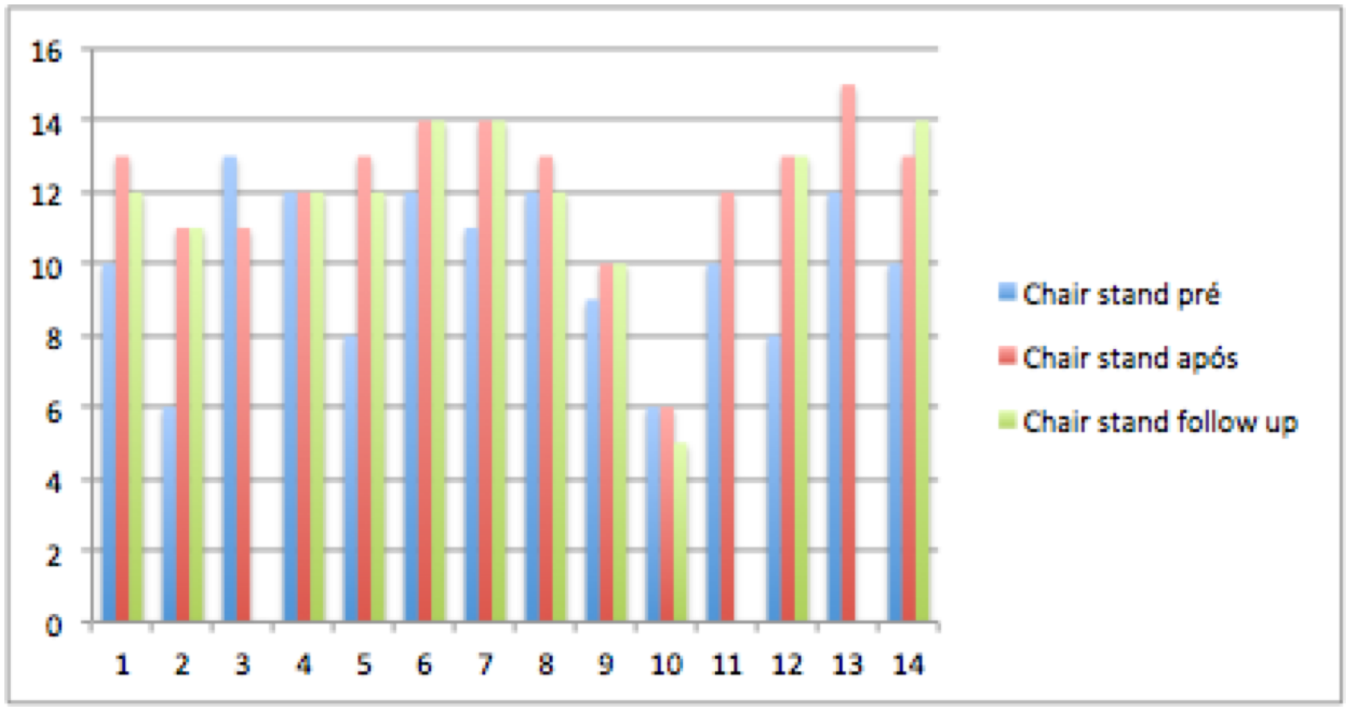
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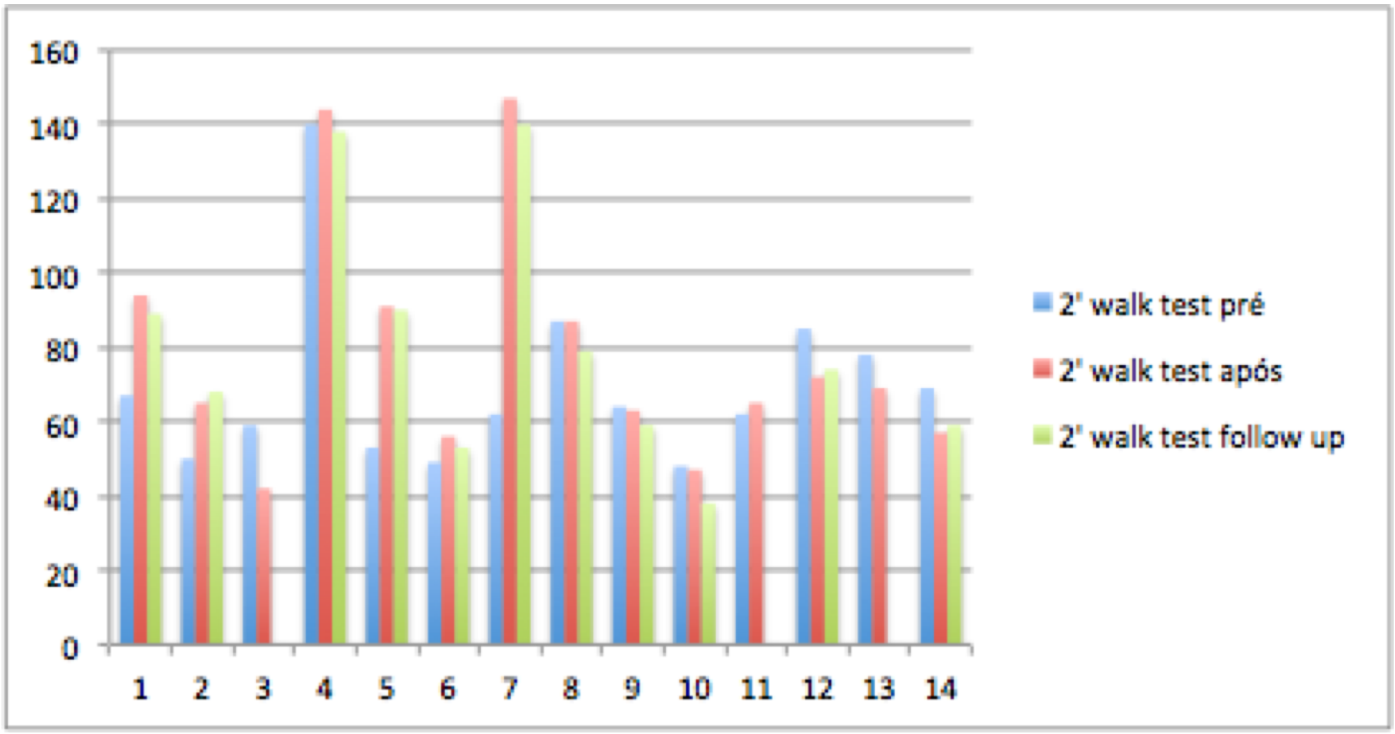
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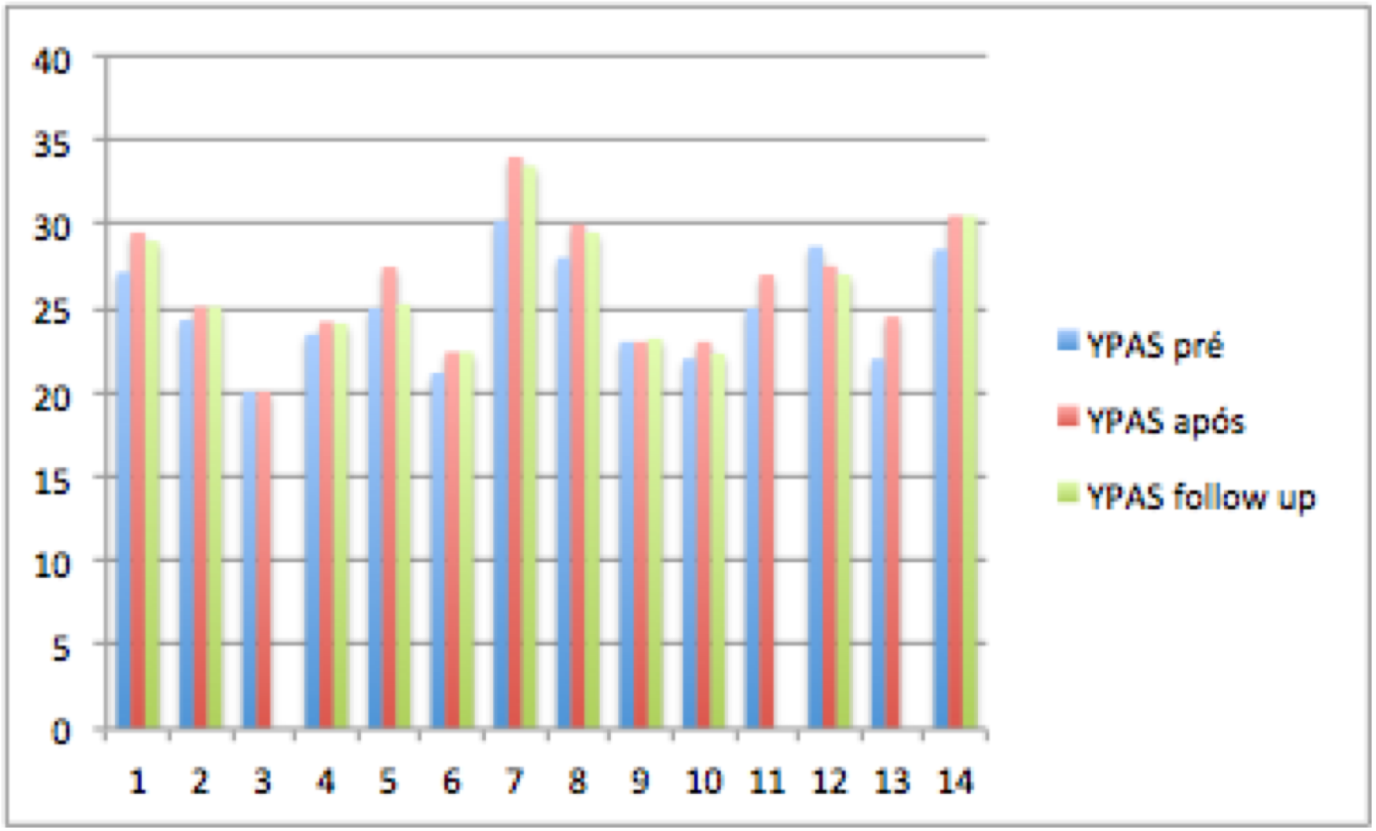
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YPAS pré
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YPAS follow up

Case 1
Female 78 years old

- TUG - 9,11 para 7,42 para 7,7
- 2’ step test - 67 para 94 para 89
- Chair stand - 10 para 13 para 12
- YPAS - 27,15 para 29,5 para 29

Case 1

- accepted to have the programme at home;
- improvement in all the measured outcomes, also at follow up;
- Strategies used by this participant: define a part of the day for physical activity, including physical activity into the day and accepting it;
- In addition to what was measured and through the diary - Walked now 3 times a week (used to walk 2);
- Enrolled in a water exercise programme, onde a week;
- Started walking to the community center once a week (initially with the physiotherapist and in the last 3 weeks alone);
- Cleary had more potential than what was being used - the husband was very sedentary and she acknowledged not to have enough self confidence to overcome that;
- Included some changes in the home environment since the husband fell and the awareness of danger increased.

Case 2
Female 75 years old

- TUG - 9,7 para 10,01
- 2’ step test - 59 para 42
- Chair stand - 13 para 11
- YPAS - 20,05 para 20,05

Case 2

- Overweight and with OA - long sitting hours
- Adherence

Through the diary was possible to know that:

the home exercises were not carried out (difficulty in doing at home what was done at the center)

frequently changing the series and repetitions recommended

- The Barriers

not willing to have the programme at home (sessions took place in the community center)

difficulty in adapting what was done at the center at home

not very motivated - only accepted in order to help the students and since it was believed that the OA would improve (however it did not comply with the programme)

the trust relationship between physiotherapist and participant was affected

- Recommendation

the place where the programme occurs is important (home versus center)

trust seems to be a key issue - begin in center move to home

motivation seems to be linked with resolution of specific symptoms (pain in this case)

B - Measurement of relevant outcomes

What seems to be associated with independence and autonomy?

What seems to be associated with decreased risk of morbidity?

1. Sedentary activity

MET's, steps or accelerometer (Ainsworth et al 1998; Tudor-Locke 2013; Lee & Shrimoa 2014)

2. Gait speed + cognitive distractor

association with cognitive function & independent functioning (Shrerer et al 2014; Schwenk et al 2014)

4. Falling risk factors

lower limb strength; balance; cardio-respiratory function (El-Khoury et al 2013;NICE 2013)

6. Self-efficacy, Self Perception of Health

ongoing projects

- Measurement of the relevant/significant outcomes
- Development of a web-platform
  - to store and use the data
  - to use as a motivation tool to return information to users and carers
- Adjustment of the intervention model

authors & collaborators

Albuquerque, Tania
Alves, Janice
Carnide, Filomena
Gomes Ferreira, Rita
Matias, Ricardo
Mateus, Diogo
Robalo, Lina
Rocha, Vitor
Romão, Mónica
Santos, Soraia

Thank you!

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- Exchange ideas - improved quality of care
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