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# REDUCED PHYSICAL ACTIVITY LEVELS IN COMMUNITY-DWELLING OLDER ADULTS IN DENMARK DURING THE COVID-19 PANDEMIC

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## Introduction

- Being physically active is important in the prevention of adverse health effects in older adults, such as falls (1), cardiovascular outcome (2) and mortality (3).
- The risk of falling has been associated with several intrinsic physical risk factors, such as muscle weakness, gait and balance deficit (4).
- Although many older adults are positive toward physical activity (PA), the factors limiting participation in PA are numerous and sometimes difficult to identify.
- The COVID-19 pandemic has dramatically reduced the amount and quality of social gatherings and interactions for older adults, which may have affected physical activity within older adults, with consequences for mental health and wellbeing.

## Objective

- The objective of this study was to investigate changes in physical activity due to the COVID-19 pandemic, among community-dwelling older adults in Denmark.

## Methods

- 62 older adults (70.4±4.3yrs) participated in this study
- The Physical Activity Scale for Elderly (PASE) (5) was accessed prior to the COVID-19 pandemic (late 2019 and January 2020), one month into the first lockdown (April 2020) and one month into the second lockdown (January 2021).
- PASE is a questionnaire assessing different exertion levels, frequencies and duration, during leisure time activity undertaken over a period of seven days. In this study, only data from the “Leisure activity component” was included.
- A repeated measures ANOVA with Greenhouse-Geisser corrections was used to test for differences between time points.

## Results

- Total physical active was lower during lockdown 1, compared to prior to the pandemic (\* =  $P < .05$ ) and lower during lockdown 2, compared to lockdown 1 and prior to the pandemic (# =  $P < .05$ ). See Table 1 and figure 1.
- Physical activity at moderate exertion level was lower during lockdown 1, compared to prior to the pandemic, (\* =  $P < .05$ ) and lower during lockdown 2, compared to lockdown 1 and prior to the pandemic (# =  $P < .05$ ). See Table 1 and figure 2

## Table 1

		Pre	Lockdown 1	Lockdown 2
Total	PASE	39.8 ± 26.4	32.7 ± 22.1 *	16.3 ± 10.3 #
	Δ %		-17%	-59%
Moderate exertion level	PASE	12.2 ± 13.9	6.2 ± 11.5 *	3.3 ± 5.7 #
	Δ %		-44%	-73%
Hard exertion level	PASE	3.1 ± 6.4	2.5 ± 8.7	0.8 ± 2.2
	Δ %		-19%	-74%

Table 1: Physical Activity Scale for Elderly (PASE) score for total leisure activity, moderate exertion level and hard exertion level. Δ % denotes percentual change from prior to the COVID-19 pandemic (Pre). \* denotes significant change from Pre. # denotes significant change from Pre and Lockdown 1. Level of significance is set to  $P < .05$ .

## Figure 1 and 2

### Total leisure activity

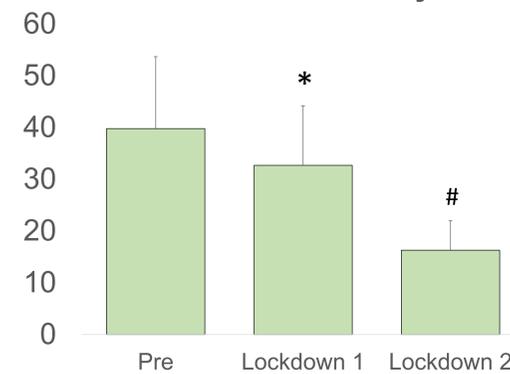


Figure 1: Physical Activity Scale for Elderly (PASE) score for total leisure activity. \* denotes significant change from Pre. # denotes significant change from Pre and Lockdown 1. Level of significance is set to  $P < .05$ .

### Moderate exertion level

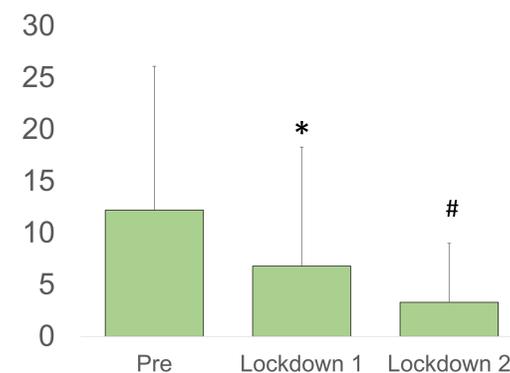


Figure 2: Physical Activity Scale for Elderly (PASE) score for Moderate exertion level. \* denotes significant change from Pre. # denotes significant change from Pre and Lockdown 1. Level of significance is set to  $P < .05$ .

## Discussion

- The total leisure activities for the older adults in our study decreased by 59% from pre-pandemic period to the second lockdown, which equals the PASE score of a combination of walking for 1-2 hours 3-4 times a week and 1-2 hours of moderate sports 1-2 days a week.
- Literature indicates that PA levels can affect both the risk of falling and the risk of getting osteoporosis (6).
- Previously, the overall reduction in fall rate, due to exercise and physical activity among older adults, has been found to be approximately 20% (7).
- A drastic reduction in physical activity can have critical consequences for general health, as low physical activity is related to reduced quality of life (8).

## Conclusion

- This data suggest that Community-dwelling older adults in Denmark might face a higher risk of experiencing fall related fractures during and following the pandemic.
- The impact of reduced physical activity for older adults following the pandemic on general health and quality of life should be researched further.

## Future Directions

- Future studies should strive to investigate, how to re-socialize the older adults in Denmark and incorporate physical activity in their everyday living.
- Future studies should try to find new ways to motivate older adults to resume pre-pandemic levels of physical activity and address how to ensure high adherence to this.
- Future studies should further try to find ways to incorporate technological solutions in physical activity, in order to mitigate the risks of such a drastic reduction in general physical activity among older adults, should more lockdowns occur in the future.

## References

1. Garcia-Hermoso, A, et al., *Sports Med* 50(6): p.1095-1106, 2020
2. Sawyer, K, & Castaneda-Sceppa, C, *Aging Health* 6(2): p.251-260, 2010
3. Saint-Maurice, P.F, et al., *JAMA* 323(12): p.1151-1160, 2020
4. American Geriatrics Society, *J Am Geriatr Soc* 49(5):664-72, 2001
5. Washburn, RA, et al., *J Clin Epidemiol* 46(2):153-62, 1993
6. Kannus, P, *BMJ* 318:205-206, 1999.
7. Sherrington, C, et al., *Cochrane Database of Systematic Reviews*, Issue 1. Art. No.: CD012424. 2019
8. Acree, LS, et al., *Health Qual Life Outcomes* 4:1-6, 2006