Effects of horseback riding for preventive care on the quality of life, the physical function, and the mental health of community-dwelling elderly

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Background

65-year-old or more population **28.4%** in Japan.

The highest percentage in the world .

Maintaining and improving
Quality of life(QOL)
is important
in preventive care.

Effect on QOL??

Aims

- Evaluated the elderly participated in a horseback riding program.
  1. Health-related QOL (HRQOL) using the MOS 36-Item Short-Form Health Survey version2 (SF-36).
  2. Motor function using the 6 items.
  3. Psychological stress using the salivary alpha-amylase activity (sAA).

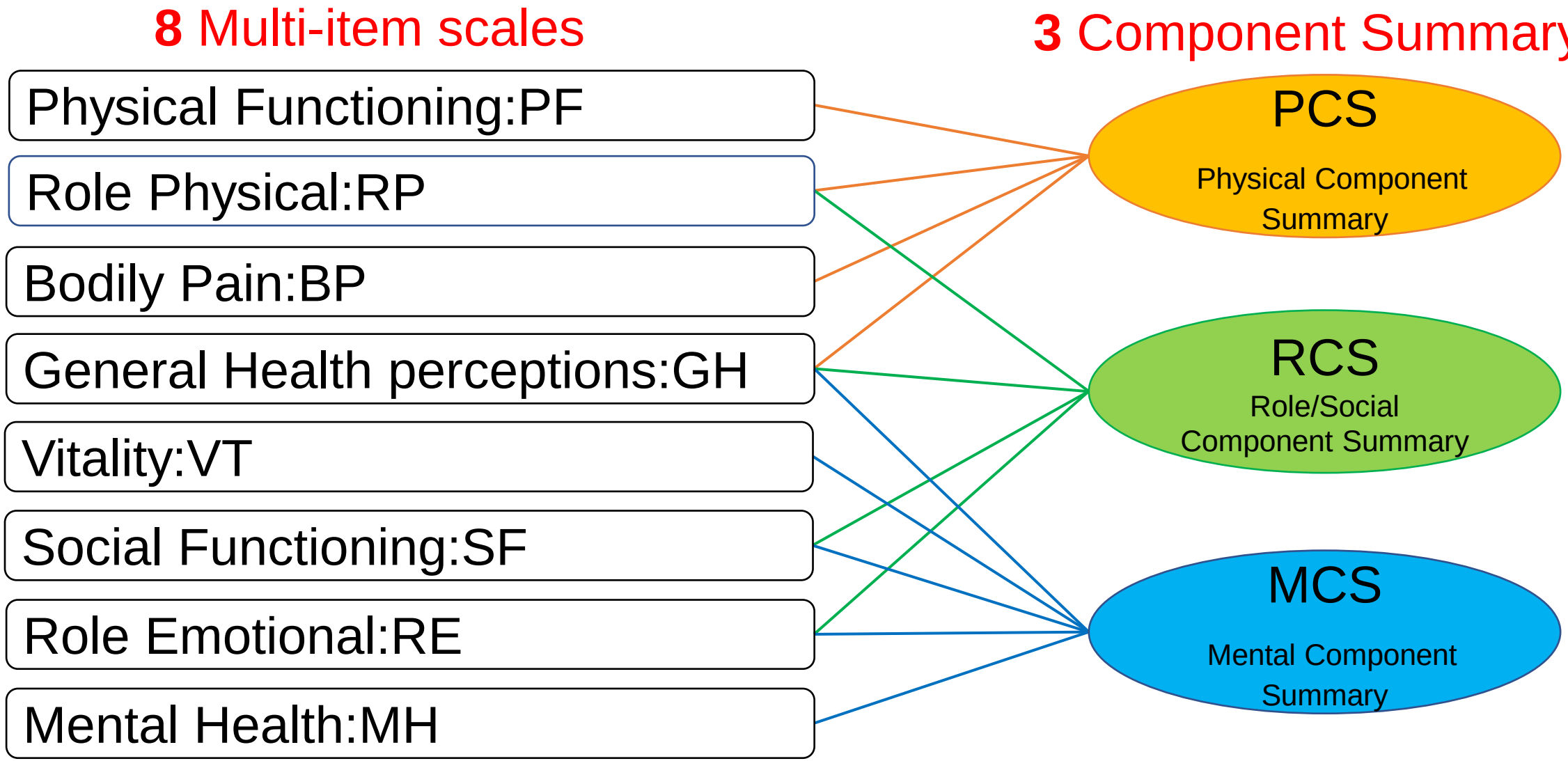
- Multiple linear regression models were used to determine which factors were associated with the HRQOL.

Participants

- The 13 community-dwelling the elderly (5 males and 8 females)
- Average age: 87.0±6.6 years old
- Activities of Daily Living (ADL) independent
- Consented to participate in the study

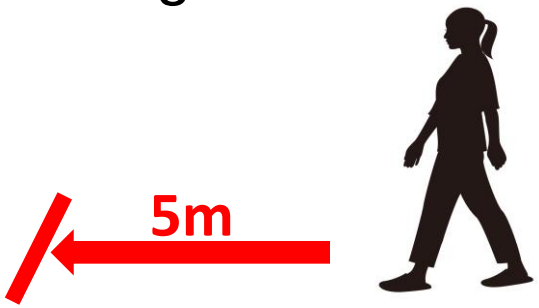
Evaluation: 1.HRQOL

- MOS 36-Item Short-Form Health Survey version2 (SF-36)



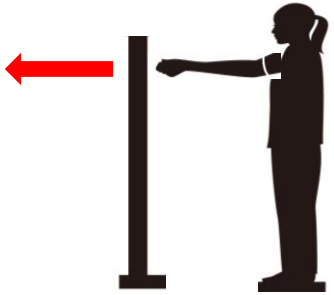
Evaluation: 2.The motor function (6 items)

5m walking time test (5MWT)



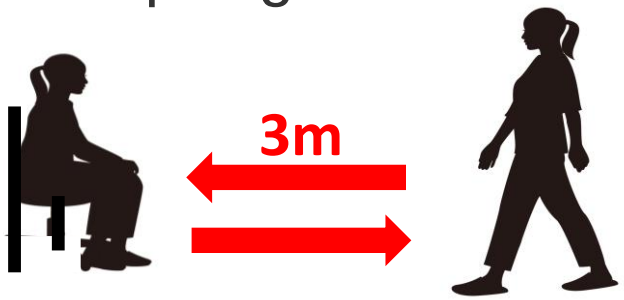
One-legged stance test (OLS)

Functional reach test (FRT)



Grip strength (GS)

Timed up & go test (TUG)



Sit and reach test (SR)

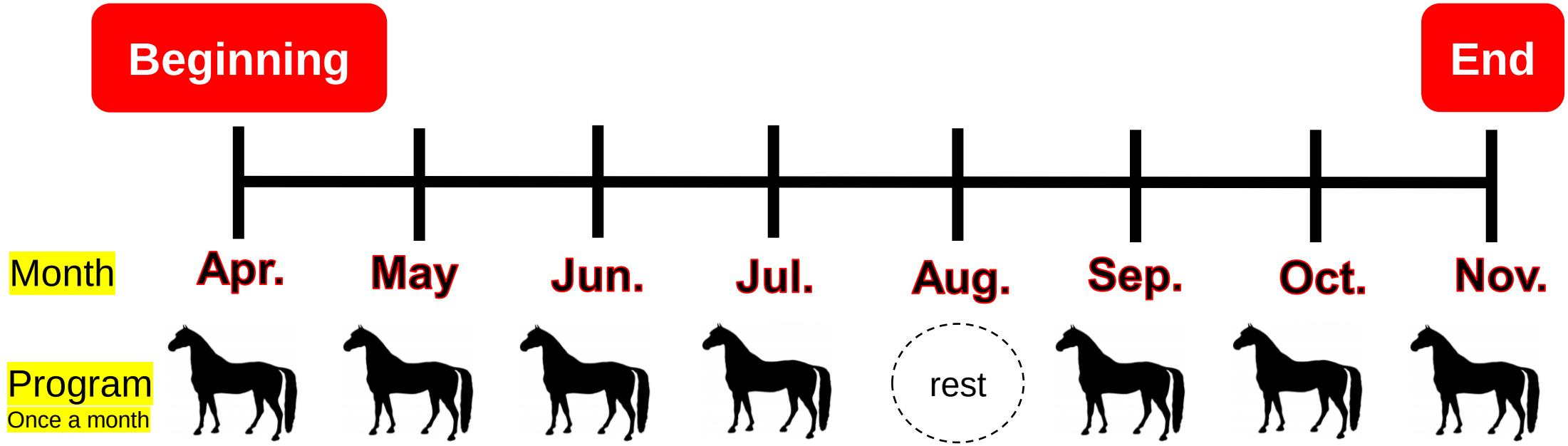
Evaluation: 3.Psychological stress

- The salivary alpha-amylase activity (sAA)

NIPRO salivary α-amylase monitor

- Measuring stress levels from saliva.
- The higher the value, the higher the stress level.

Protocol



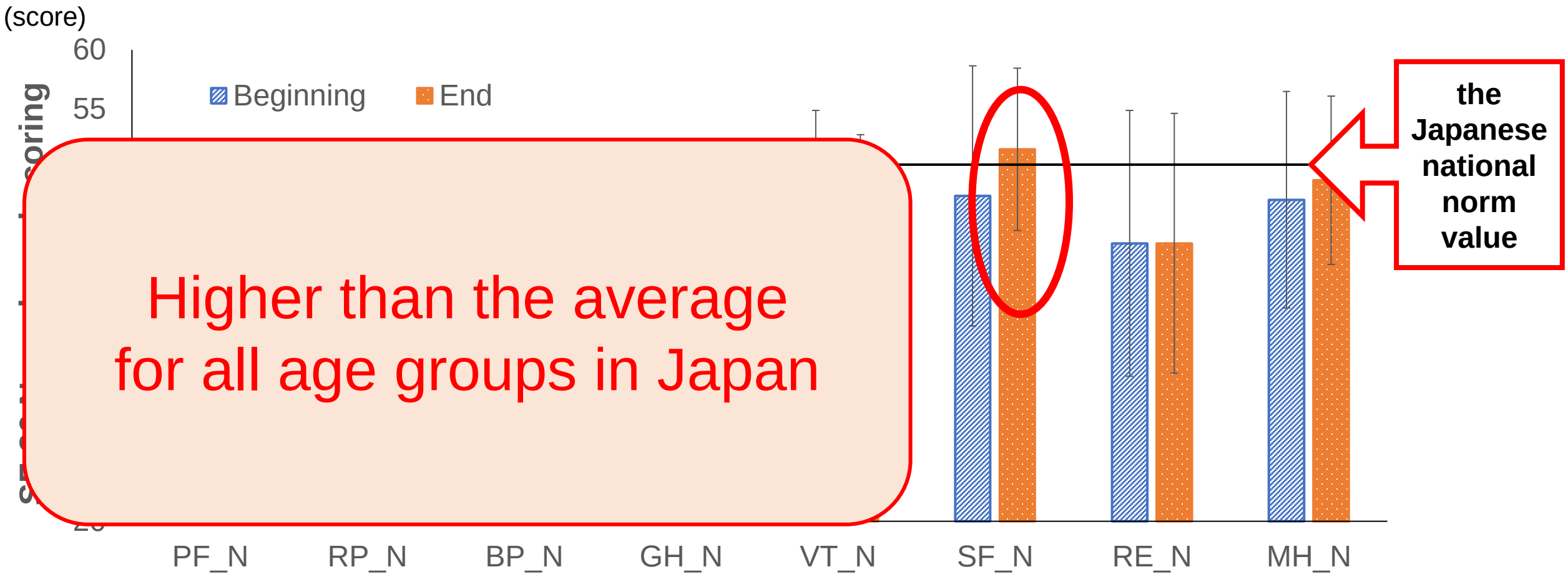
Evaluation

1.HRQOL:SF-36
2.Motor function:
5MWT, OLS,
FRT,GS,TUG,SR

3.Psychological
stress:sAA
(before-after a
riding session)

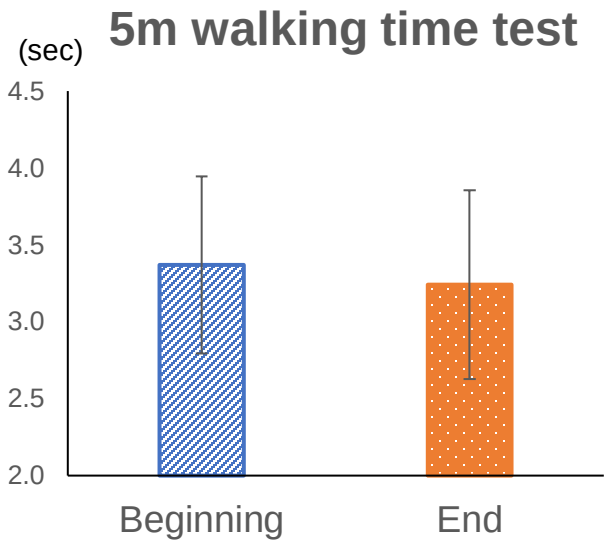
1.HRQOL:SF-36
2.Motor function:
5MWT, OLS,
FRT,GS,TUG,SR

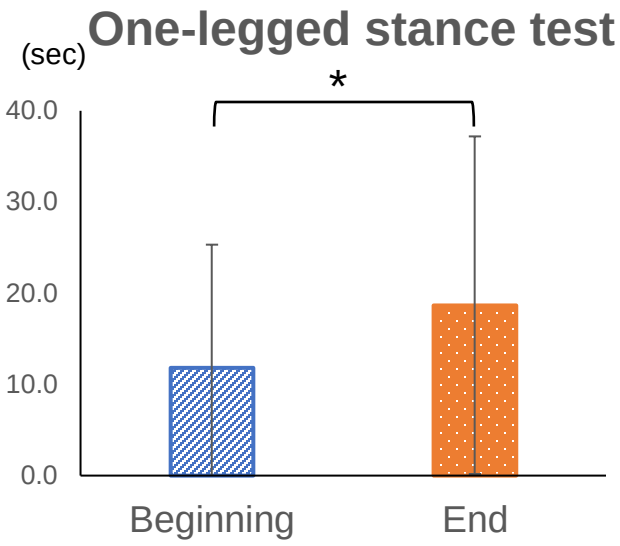
Results: 1.HRQOL(SF-36)

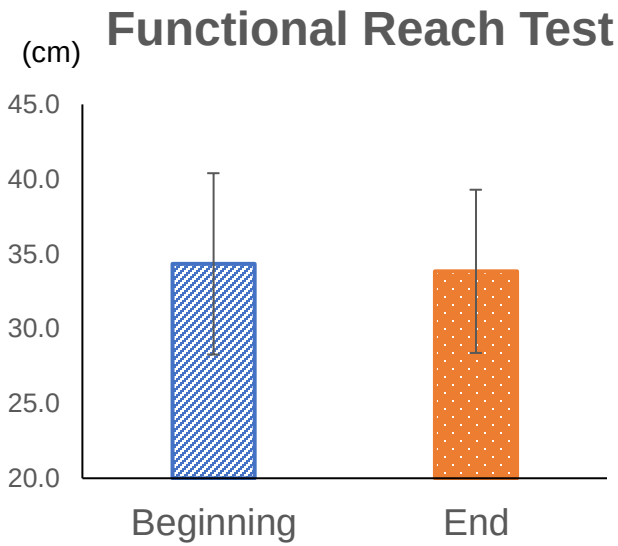


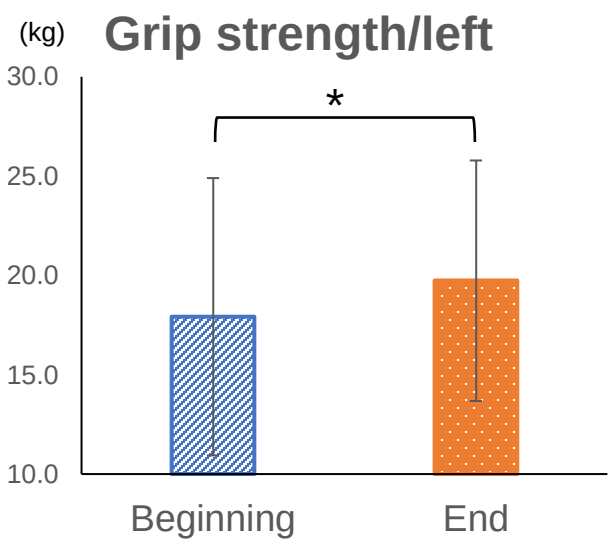
➢The social functioning (SF) was higher than 50 score of the Japanese national norm value at the end.

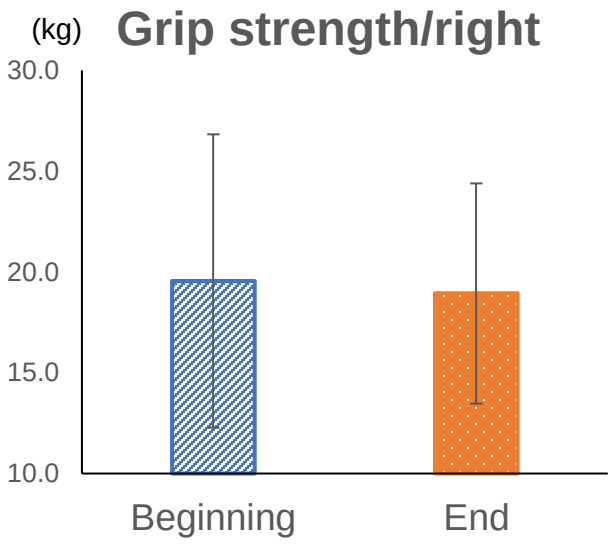
Results: 2.The motor function

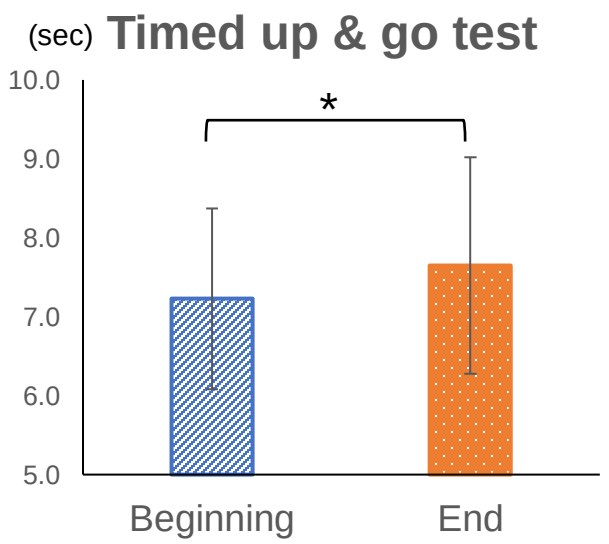


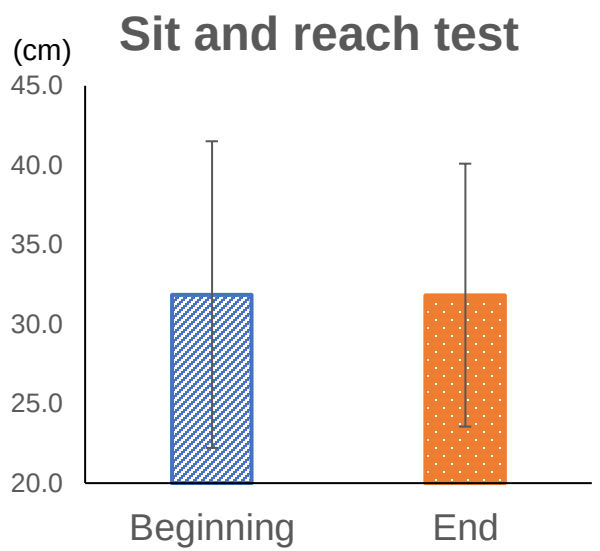






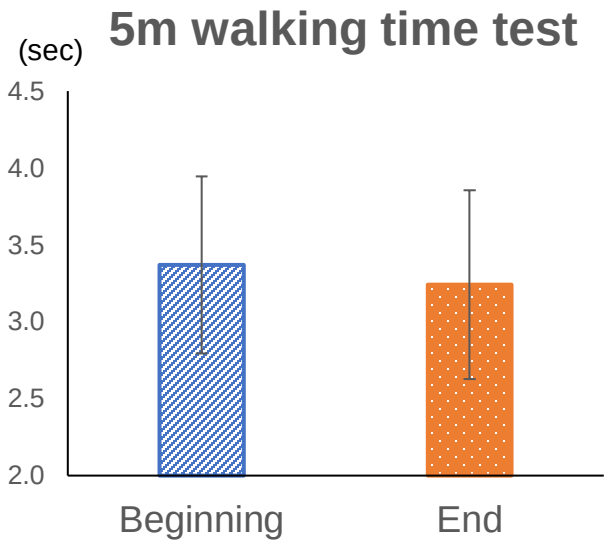


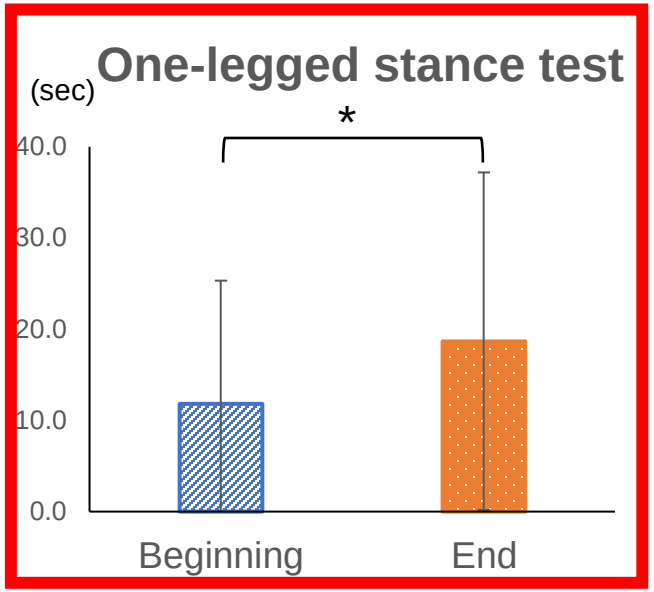


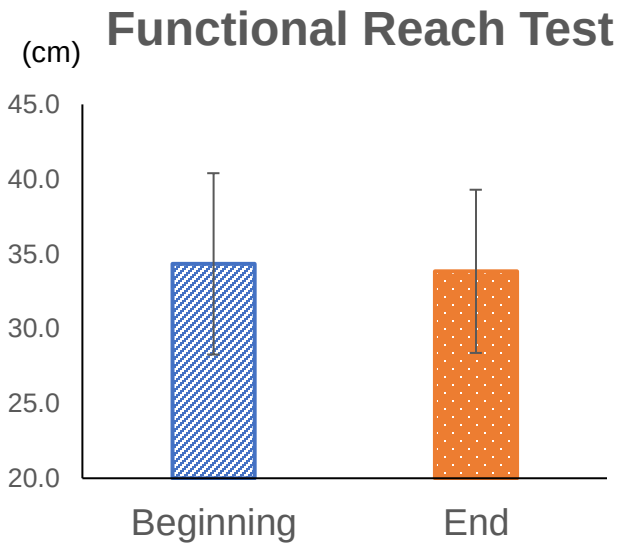


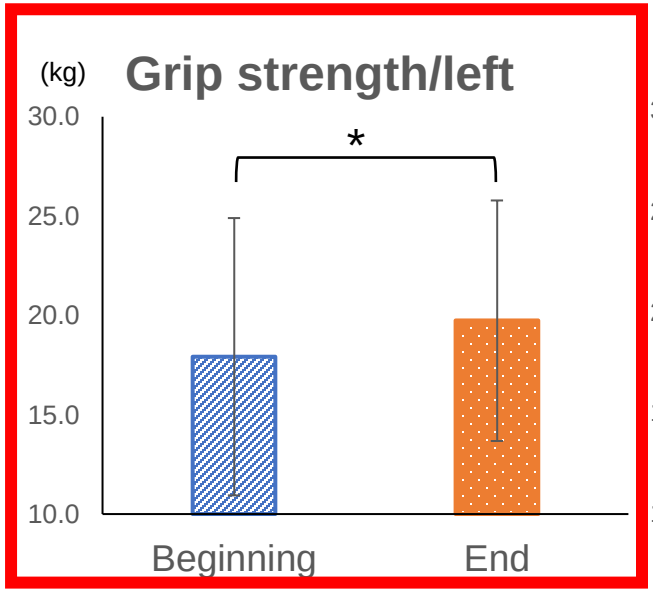
＊：p＜0.05

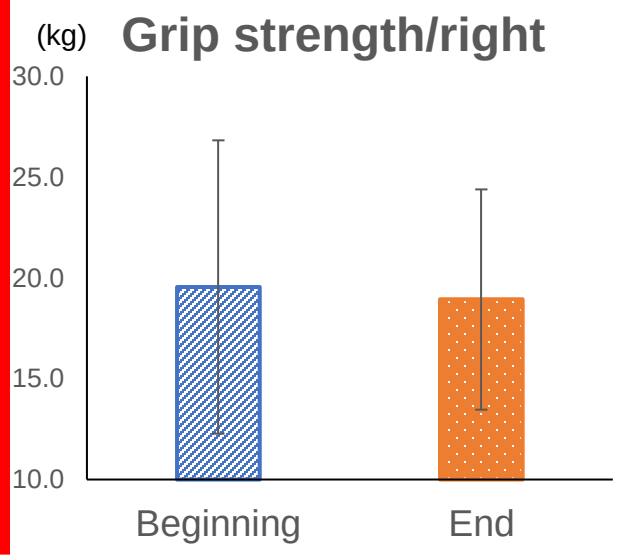
Results: 2.The motor function

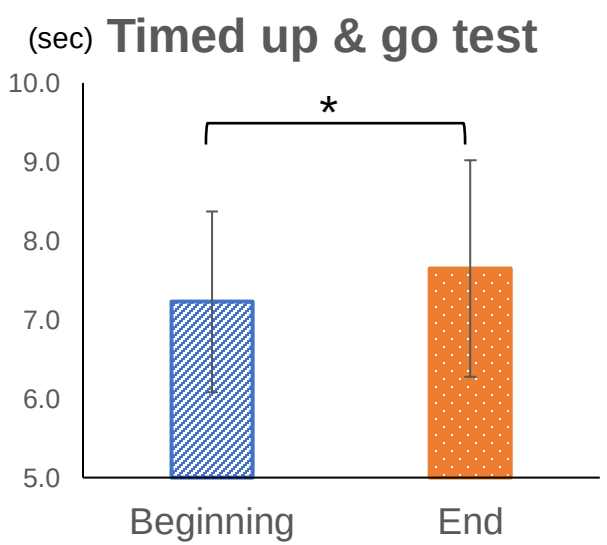


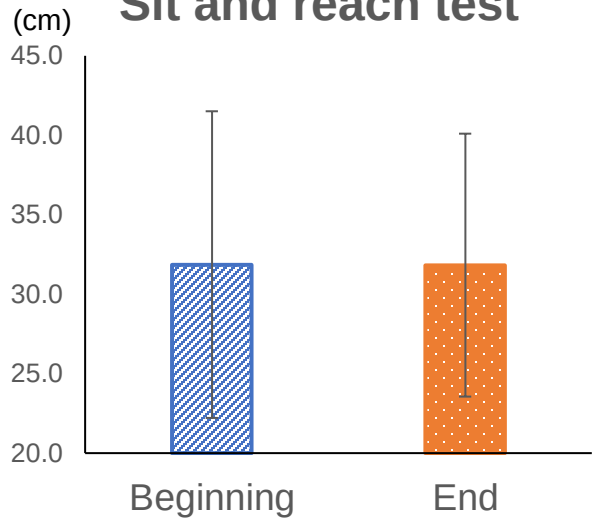








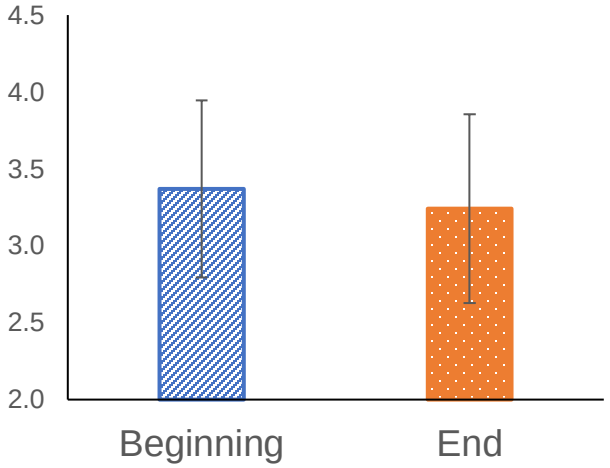




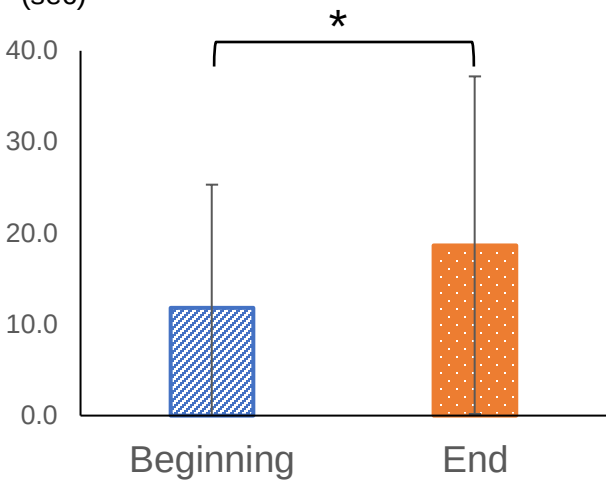
＊：p＜0.05

Results: 2.The motor function

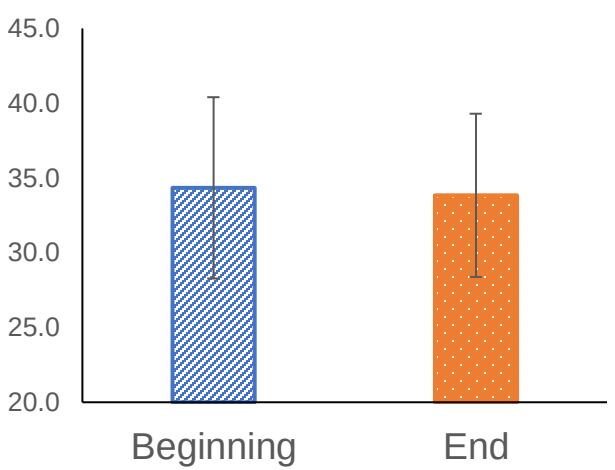
5m walking time test



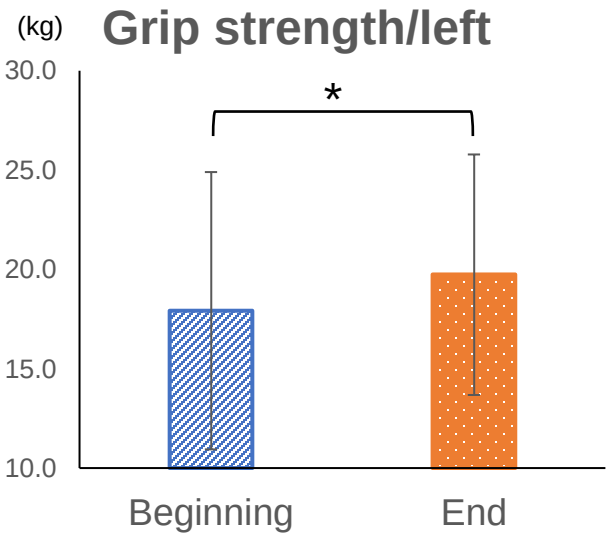
One-legged stance test



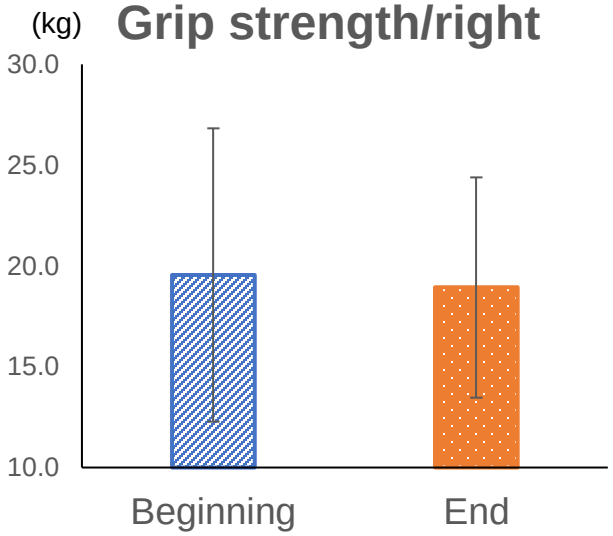
Functional Reach Test



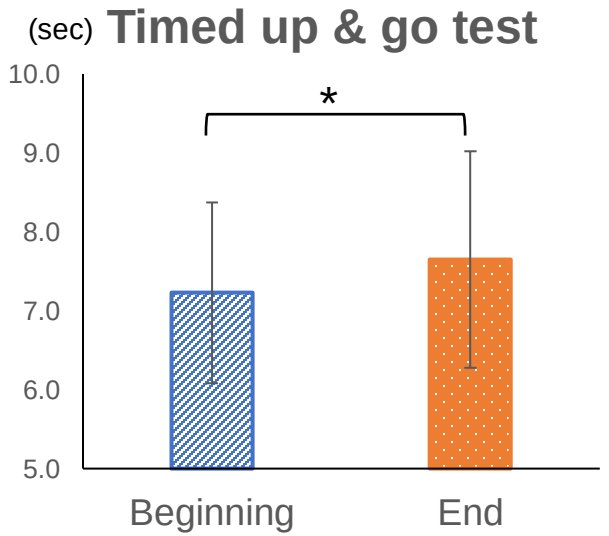
Grip strength/left



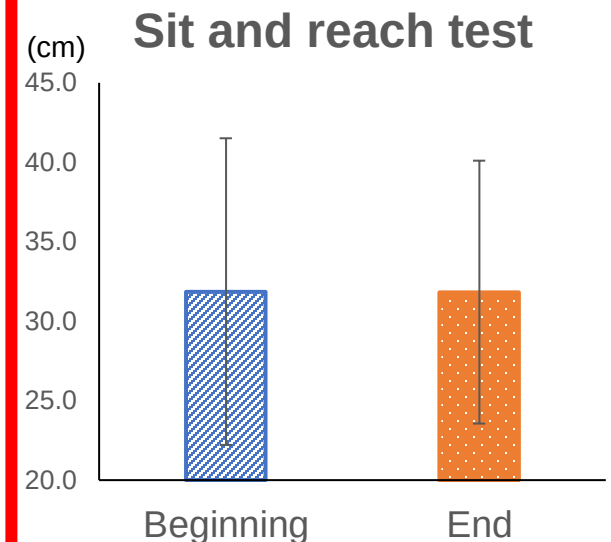
Grip strength/right



Timed up & go test



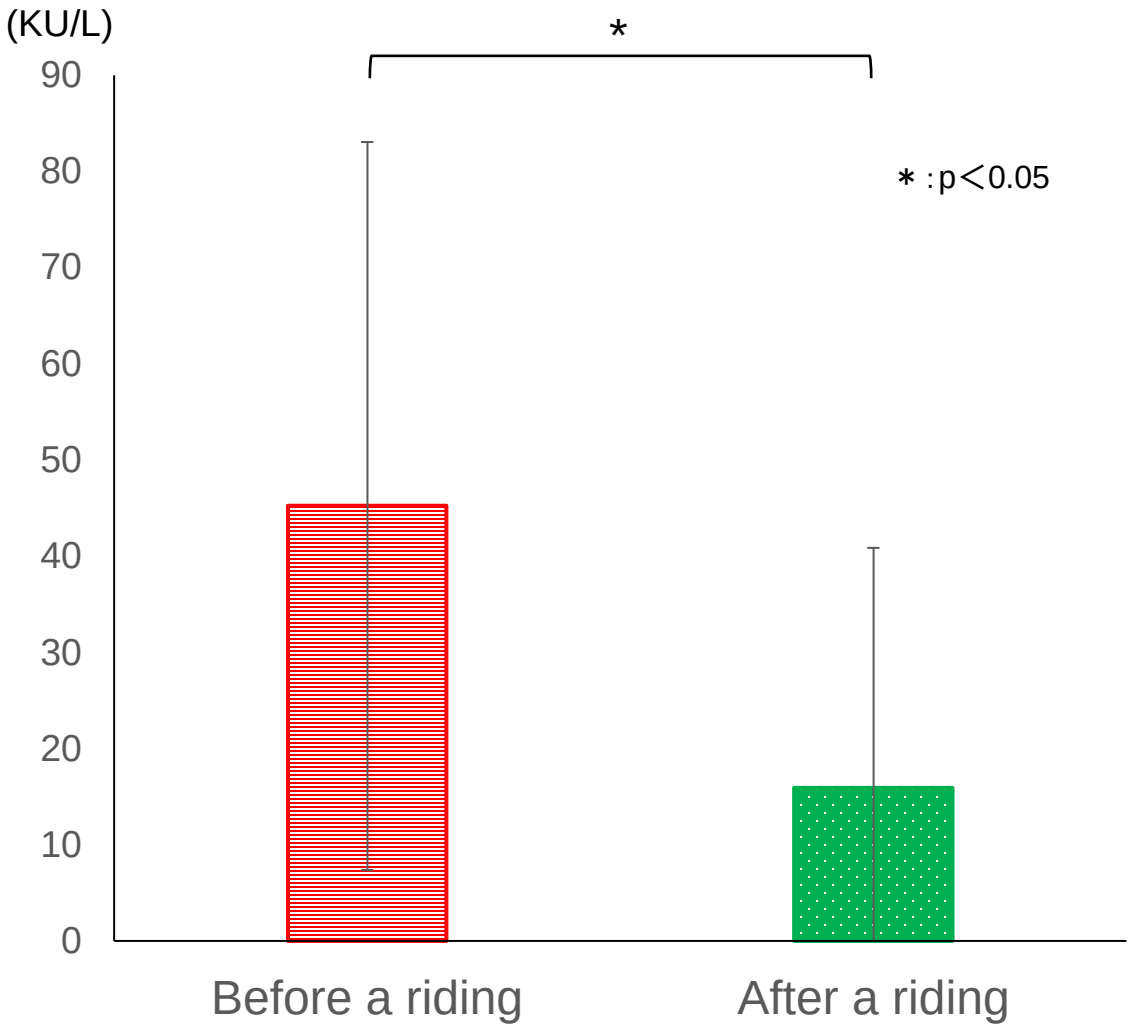
Sit and reach test



＊：p＜0.05

Results: 3.The psychological stress

- The salivary alpha-amylase activity (sAA)



➢**sAA** significantly decreased.

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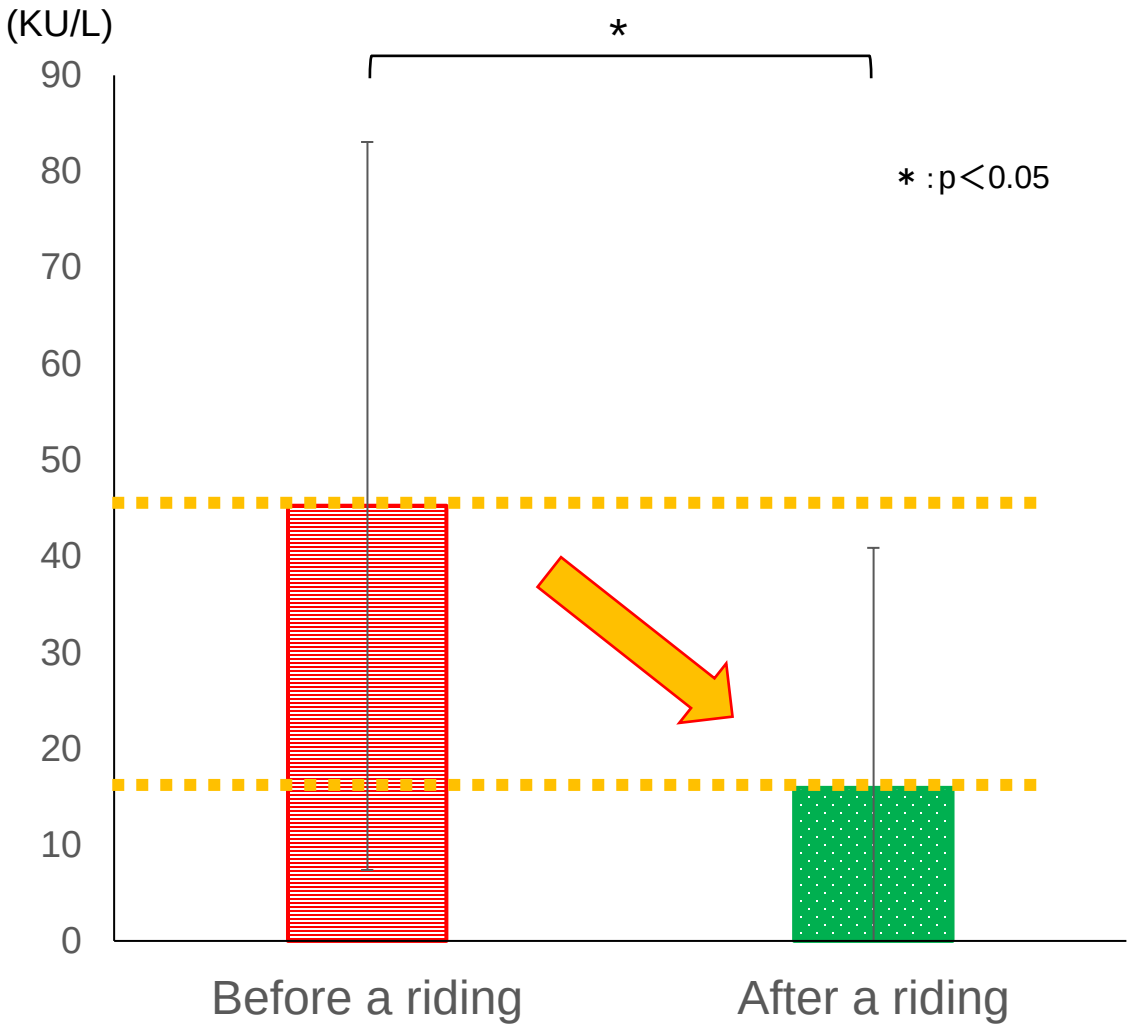

➢**sAA** significantly decreased.

Stress levels were reduced.

Results: Multiple linear regression

Dependent variable

	PCS Physical Component Summary		**RCS** Role/Social Component Summary		**MCS** Mental Component Summary
Beginning		Partial regression coefficient	(No significant)		(No significant)
	Timed up & go test	-4.94**			
	One-legged stance test	0.28*			
End		Partial regression coefficient		Partial regression coefficient	(No significant)
	Changes in the sAA	-0.37*	**Number of horseback riding**	3.23*	
	One-legged stance test	0.48*	**5m walking time test**	-19.80*	

◎Only positive and significant associations ◎Significant difference: *p<0.05, **p<0.01

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Discussion

≪Previous study≫

- The community-dwelling elderly people might be enhanced HRQOL by participating in social activities.

Discussion

Interaction with others

Going out

Muscle activation

Mild exercise

HRQOL → **High Social functioning score**

Postural control → **Improve dynamic balance**

Autonomic nerves → **Reduce psychological stress**

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Discussion

Psychological stress

Dynamic balance

Number of horseback riding

PCS
Physical Component Summary

RCS
Role/Social Component Summary

HRQOL

Psychological stress, dynamic balance and the number of rides were related to **PCS** and **RCS** scores in SF-36.

Conclusions

◎Increasing opportunities for **social participation** and improving **dynamic balance.**

⇒Helping maintain and improve the **HRQOL**.

◎Large sample size and age and gender matched control group should be required.

⇒Clarify the effects of horseback riding on preventive care.

Contact us

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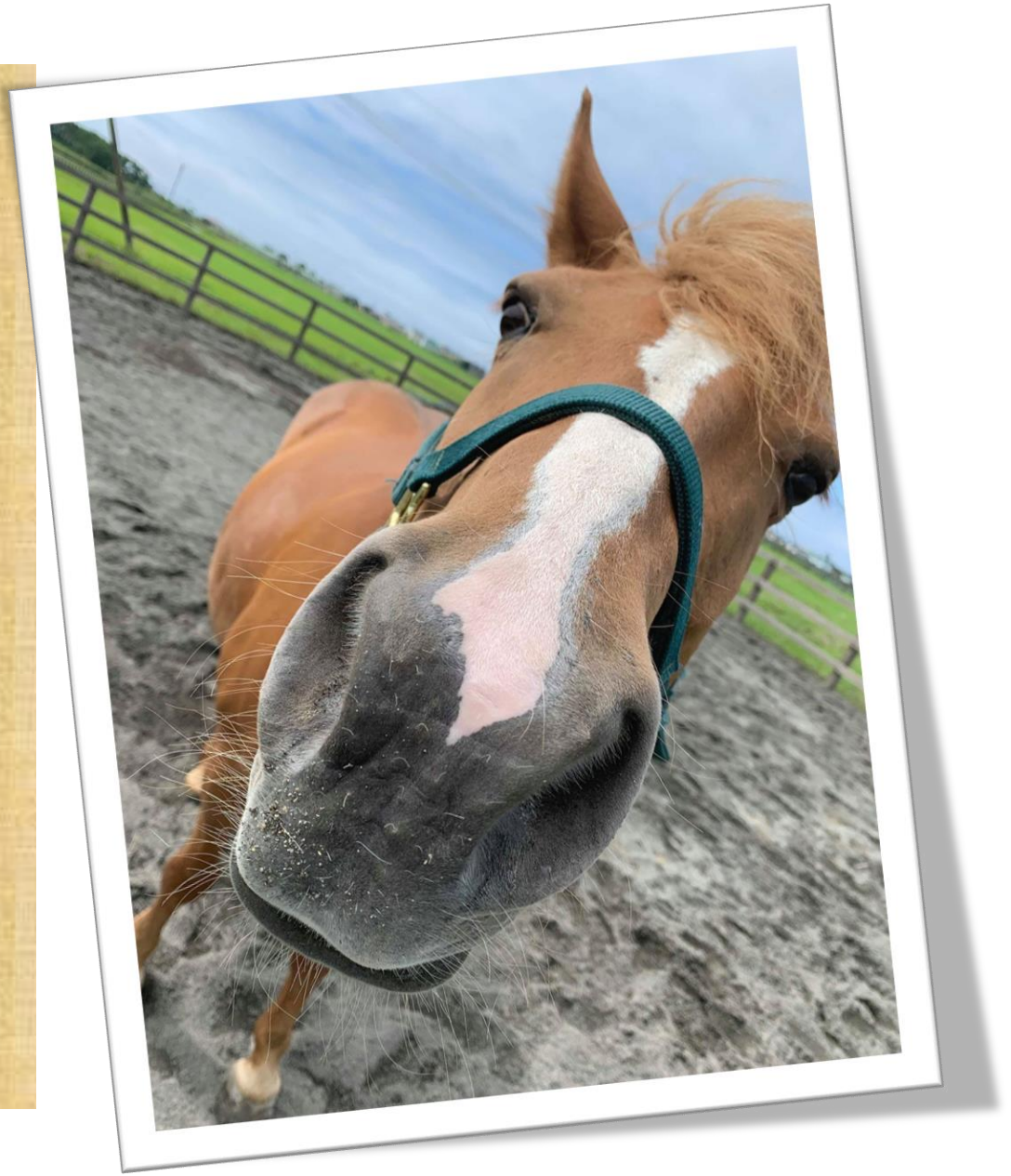

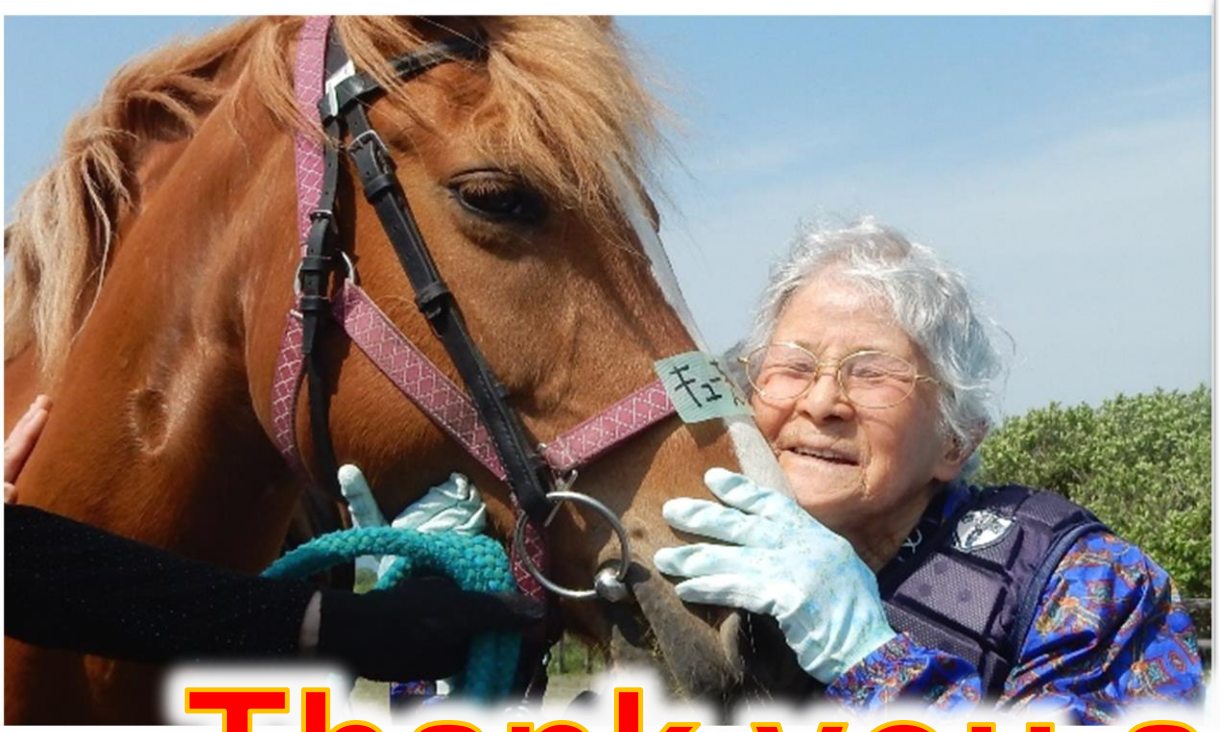

Thank you all for listening!