

Impact of ESDM therapy 9 hours per week at home on young children with ASD: a pilot study.

Introduction

The Early Start Denver Model (ESDM) is an intervention program recommended for young children with ASD (from 12 – 48 months). It is an early, intensive and individualized treatment, based on behavioral methods. This method has showed significant results with an intensity of 20 hours per week ^(1, 2) with a ration of one therapist for one children.

In Lausanne, Switzerland, we have been implementing this model for two years, starting with home intervention for 9 hours a week. The aim of our study is to analyze the impact of ESDM intervention according to this modality.

Methods

- **Participants** : 4 children diagnosed with ASD according to the DSM 5 criteria, under 4 years old.
- **Intervention** : ESDM Therapy, delivered by a multidisciplinary ESDM-certified team, at home, 3 mornings a week (9 hours) during two years. In parallel, parents are coached by a psychologist.
- **Two time point assessment** : before intervention (T0 $M_{age}=25.1$ months), and after (T2, $M_{age}=45.6$ months) with ADOS 2, VABS II and MSEL. No statistics were made considering the too small N, the data are presented in a descriptive way.

Results

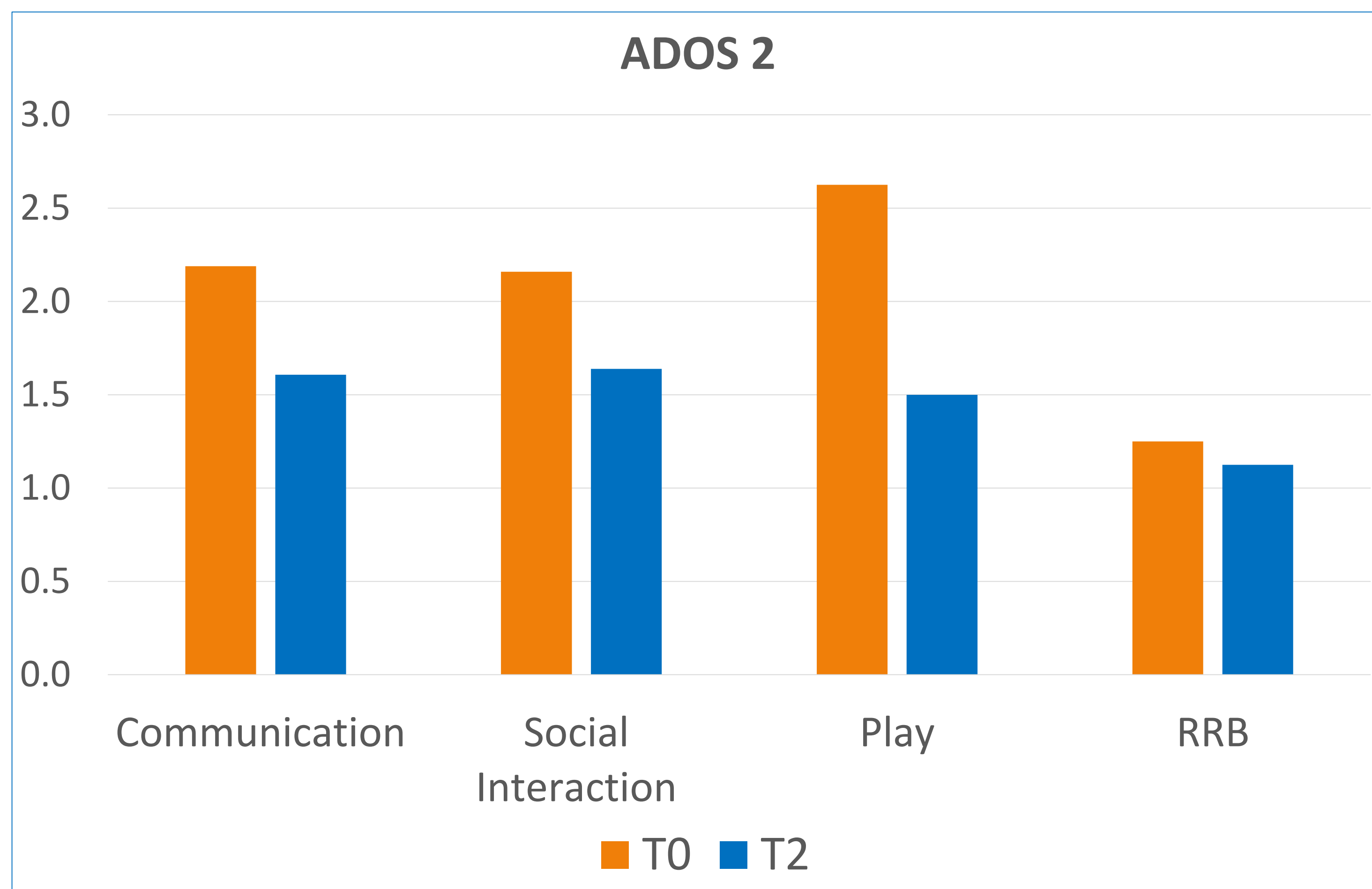


Figure 1: Evolution of the average scores on the common items of the T-1-2 modules of the ADOS 2, before and after the intervention.
NB: a decreasing score is interpreted as a decrease in ASD symptomatology

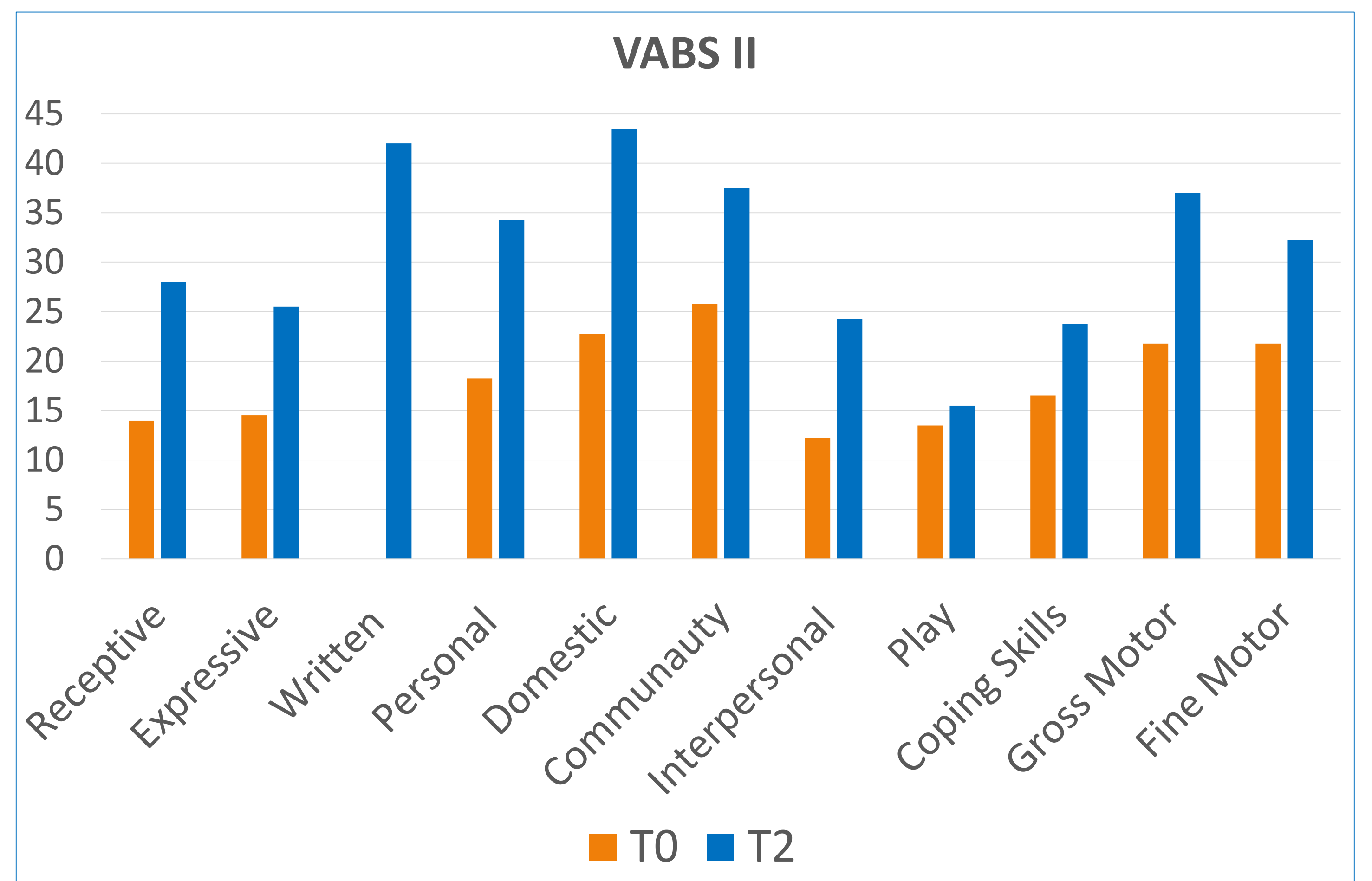


Figure 2: Evolution of average equivalent ages at Vineland II before and after intervention

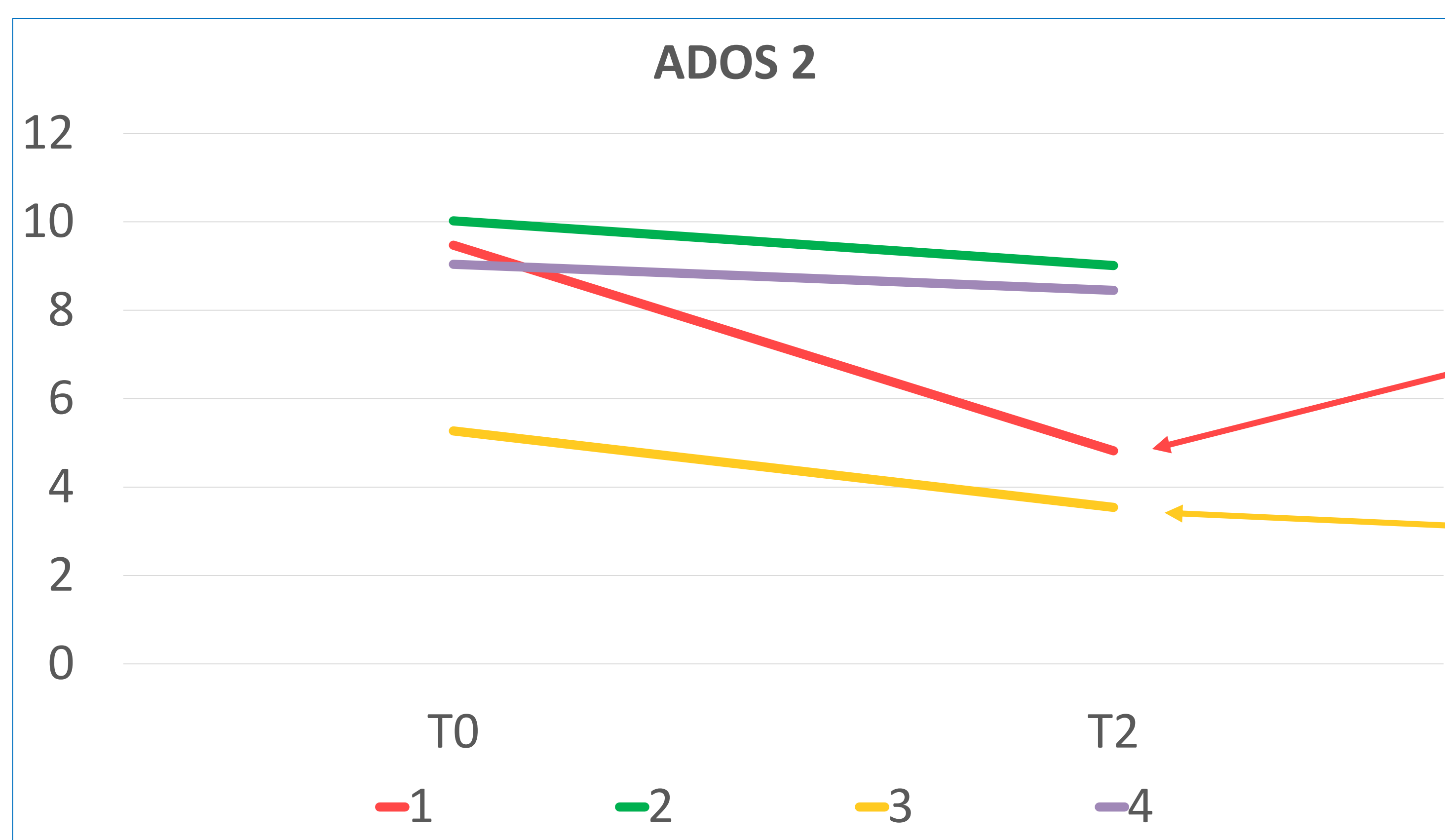


Figure 4: Evolution of total scores of common items at ADOS 2 for each subject.

Subject	Time	Age (m)	DQ	V-DQ	NV-DQ
1	T0	30.2	45,45	28,10	62,81
	T2	54.2	58,53	49,77	67,28
2	T0	21.1	35,55	26,07	45,02
	T2	44.2	34,44	29,36	39,52
3	T0	24	81,25	68,75	93,75
	T2	36.1	97,00*	99,00*	97,00*
4	T0	25.1	45,65	29,77	61,53
	T2	47.9	37,58	25,05	50,10

Figure 5: Development quotients (DQ) calculated from MSEL.
* This child was assessed with the WPPSI-IV in T2 because of their positive evolution. These scores correspond to IQ, Verbal IQ and Non verbal IQ

Conclusion

- Improvements are observed in the four domains of ADOS, slightly less marked for RRBs, which could potentially be explained with the natural increase of RRBs with age.
- Progress are observed in all the scales of VABS II, in particular for the Domestic (+ 20.5 months) and Personal (+ 16 months) daily skills.
- Two participants showed clear improvement with 9 hours ESDM therapy at home. These results lead us to reflect on the potentially moderating role of developmental abilities in the improvement of ASD symptomatology with treatment, as shown by the literature.
- This pilot study shows that further studies are needed to better identify subgroups of patients who would benefit from lower intensity therapy.

