

# Longitudinal Study: Developmental Resource Stimulation Programme: Dr Dorothy Russell

- Down Syndrome (DS) has been recognised as the leading genetic cause of intellectual disability.
- Even though the incidence of DS in South Africa is one in 770 births; early intervention programmes for these children are rare.
- My PhD study in 2013 showed clinically that the Developmental Resource Stimulation Programme (DRSP) was beneficial for babies with DS younger than 42 months.

## Aim

- The aim of this presentation was to investigate the long term effect on the developmental progress of the DRSP in DS

## Sample

- Of the 44 children with DS that received DRSP intervention, only 27 children could be followed up over a period of 3 years



# Method

- As Bayley Scales of Infant and Toddler Development is one of the assessment tools most commonly used in children with intellectual disabilities. I used it during the PhD and now continuously as part of the DRSP sessions



# Developmental Resource Stimulation Programme



Dorothy Russell  
2010

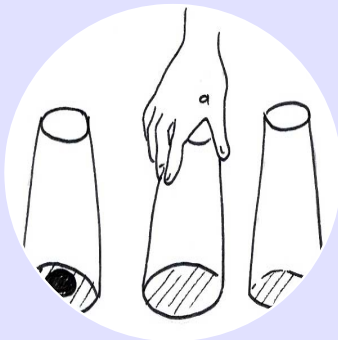


# DRSP

- The DRSP is a unique, one-on-one, child-parent specific integrated developmental programme for children with DS from birth to 42 months.
- It was designed to strengthen the parent-child interactions without emotional constraints.
- The DRSP comprises of two parts, an Activities and a Technical Manual.
- The KIT consists of 3 mugs, a face cloth and 4 teaspoons. Household toys that can be placed in a handbag.

# DRSP

- There are 85 activities with a description and sketch to accomplish specific activity performances in developmental domains, namely
- Cognitive-, language-, fine-motor and gross-motor development, as well as activities found in everyday living.
- The outcomes of each activity is described to be used by parents during activity participation at home.
- In the manual the treatment goals and techniques on how activities should be used during intervention are included.



**KIT**

Activities  
Manual

**COG**

Cognitive  
Development

**RL/EL**

Receptive and  
Expressive  
Language

**FM**

Fine motor  
Development

**GM**

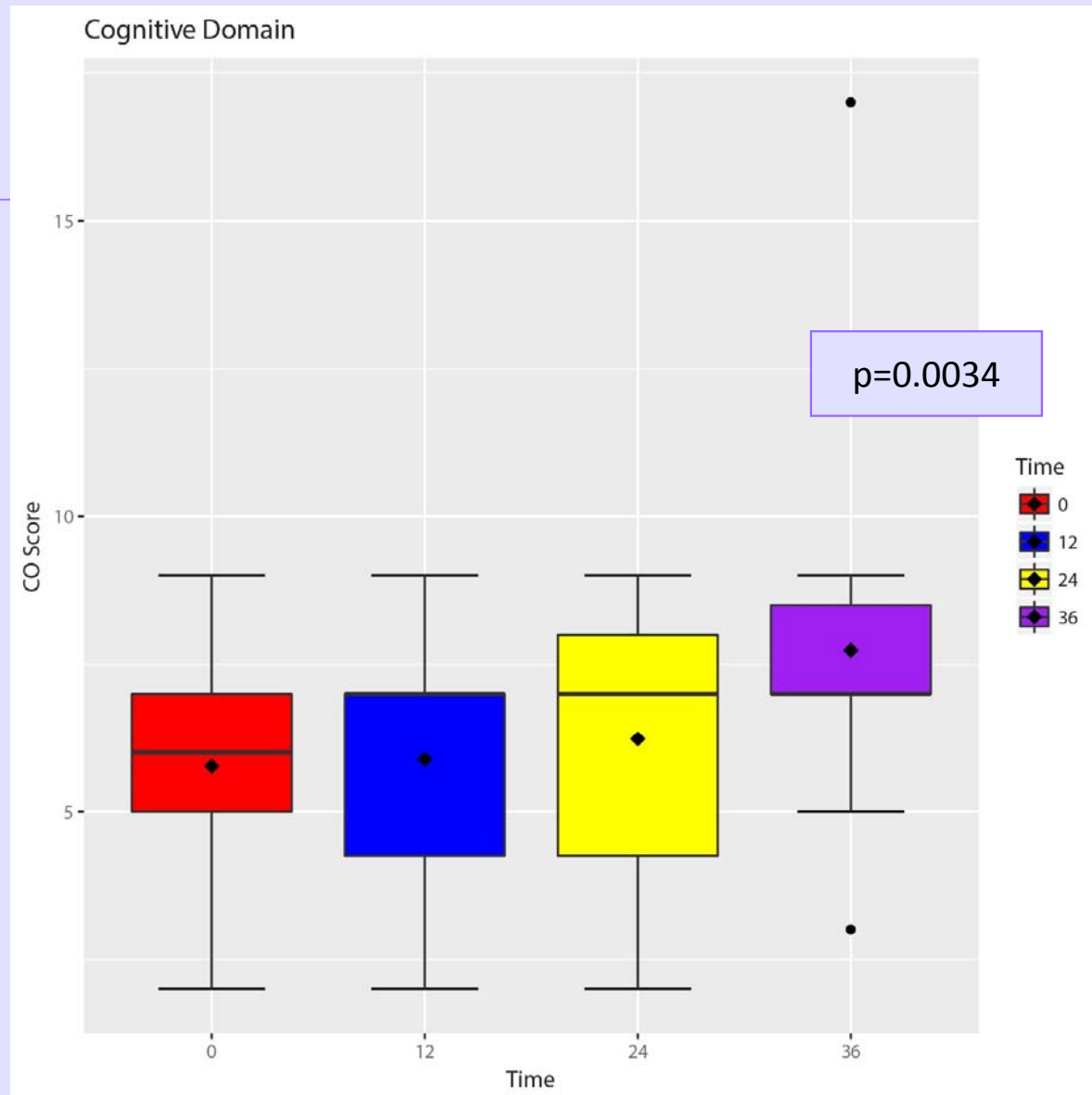
Gross Motor  
Development

# Results – Cognitive Domain

- A repeated measures ANOVA (analysis of variance) confirmed statistical significant differences between the cognitive scores over time with a p-value of less than 5% ( $p=0.0034$ ).
- This is exciting as DS is classified as an Intellectual Disability and this has not been reflected in literature.



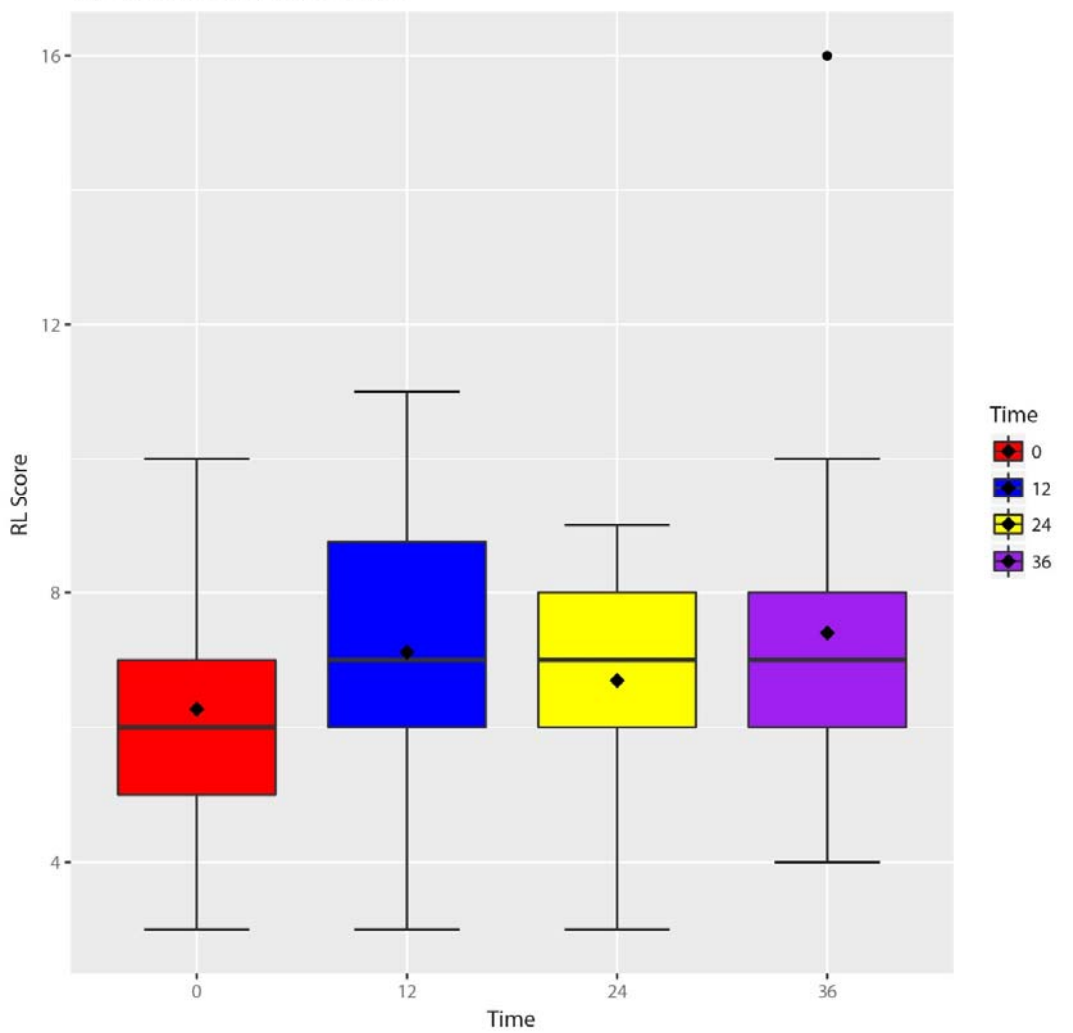
# Results



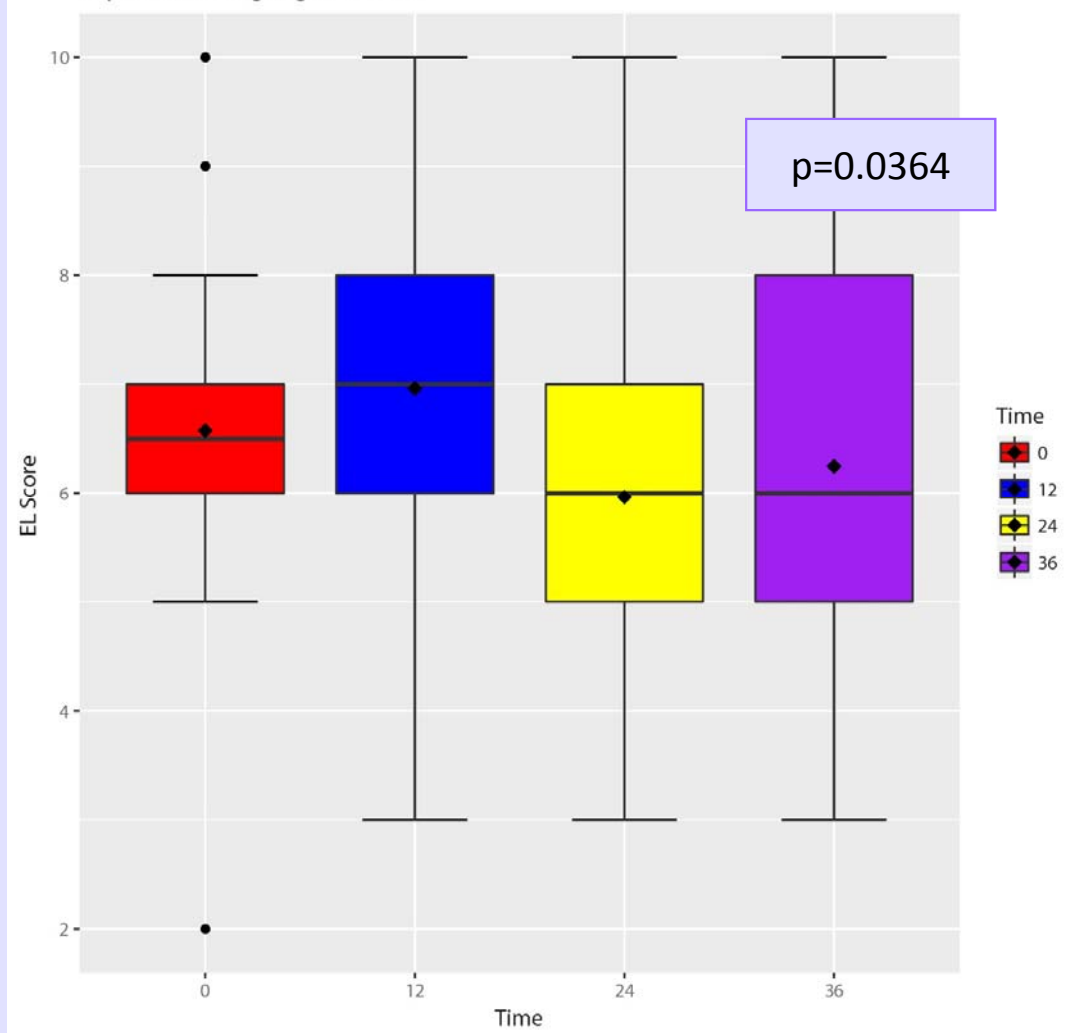
# Results – Language Domain

- The Expressive Language Domain shows statistical significant differences over time ( $p=0.0364$ ). A slight increase is observed from 0 to 12 months, with a decline between 12 and 24 months, with a slight increase in the last phase between 24 and 36 months.
- The literature describes only decline in Expressive Language. This indicates that the holistic approach of the DRSP has positive outcomes.

Receptive Language Domain



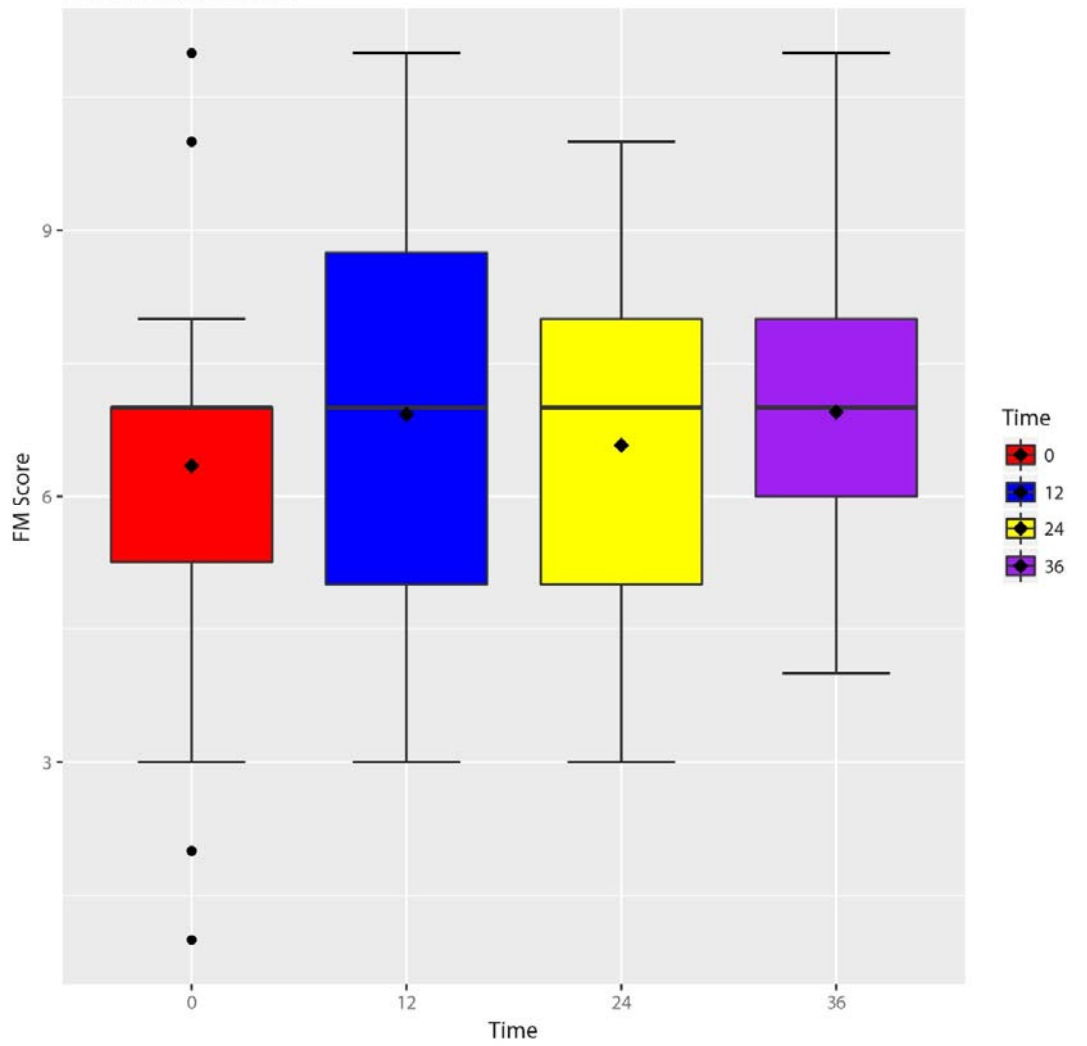
Expressive Language Domain



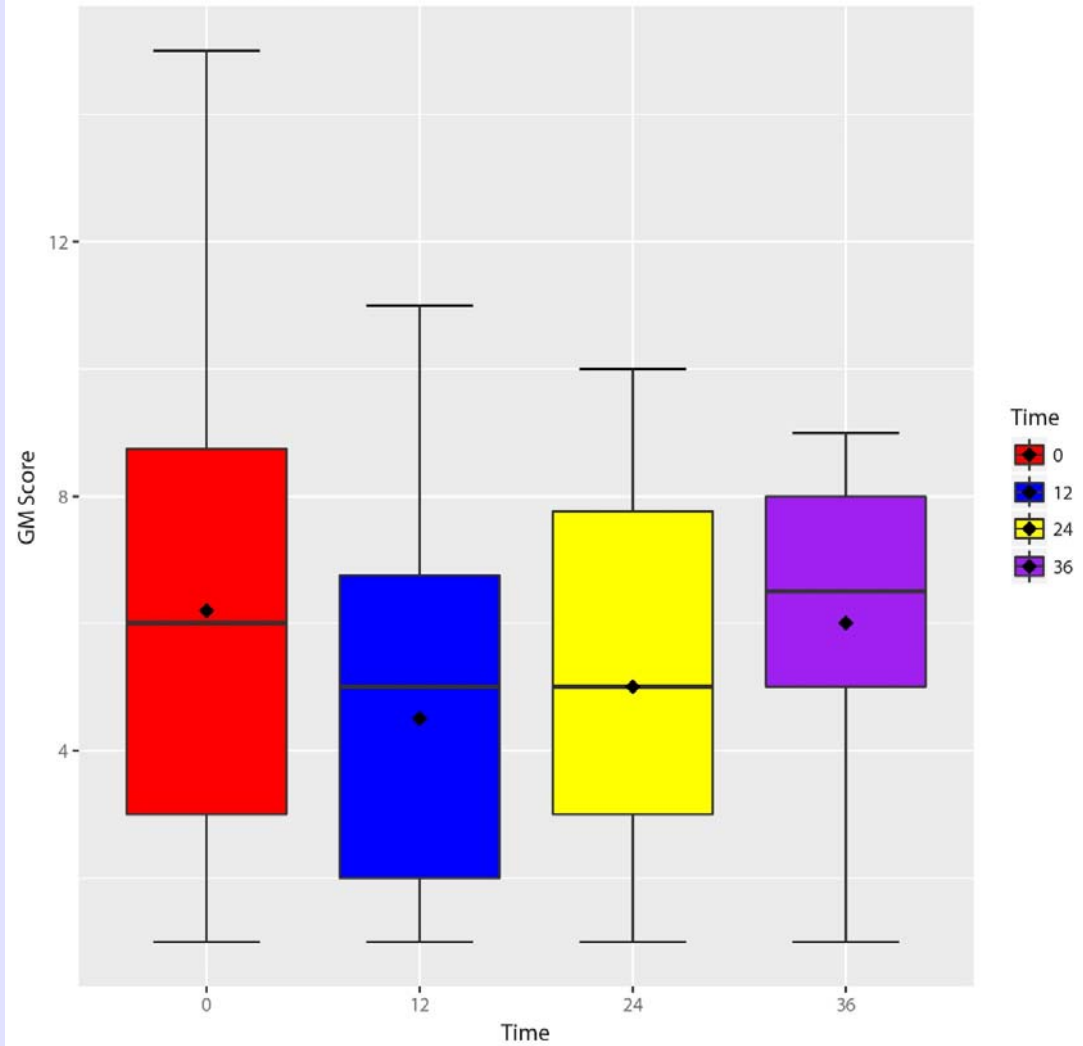
# Results – Motor Domain

- Fine motor increase over time, but gross motor shows initial decline with increase over remainder of the time. These are general trends, but did not result in statistical significant differences.
- The Gross Motor Domain is also not a replication of the literature, because according to the literature children with DS only walk after 3 years of age. The average for walking with intervention on the DRSP is 20 months. (Great positive)

Fine Motor Domain



Gross Motor Domain



# Conclusions

- My PhD study showed that the DRSP is of value to an occupational therapist in early intervention of babies with Down syndrome younger than 42 months.
- This longitudinal study showed statistical significant differences.
- From these positive results the assumption can be made that the DRSP intervention shows sustainable progress in the young child with DS and therefore could also be used in babies with developmental delays.



**Thank you**

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