





AutismCRC

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## Literacy environments for preschool children with ASD: What's happening at home?


**Marleen Westerveld, Anne van Bysterveldt, Jessica Paynter, & David Trembath**




## Marleen Westerveld


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## Children with Autism Spectrum Disorder

- Core deficits in **social interaction and communication** skills combined with repetitive and restricted behaviours and interests
- Latest results suggest ASD affects approx. 1 in 68 children (CDCP, 2014);
- 95% of these children experience difficulties in education, due to social, communication and learning difficulties
- ASD is a 'spectrum disorder' due to heterogeneity and severity of symptoms varies.



## ASD and reading


- About 50% of children with ASD struggle to read (Jones et al., 2009; Nation et al., 2006; Ricketts et al., 2013).
- Some children with ASD do not learn to read at all.
- A majority of children with ASD show difficulties in reading comprehension
- Successful reading comprehension requires adequate word recognition and adequate language comprehension (Simple View of Reading) (Gough & Tunmer, 1986).



## ASD and reading

- Precursor skills needed for successful reading develop long before children start school aka **emergent literacy development**.
- Emergent literacy skills comprise meaning-related skills (e.g., vocabulary, narrative) and print-related skills (e.g. letter knowledge, phonological awareness).
- Very little existing research into the development of emergent literacy skills in children with ASD – prior to school-entry.

Davidson & Ellis Weismer, 2013; Dynia et al., 2014; Justice & Pullen, 2003; Lanter et al., 2012; Westerveld et al., 2016



## The home literacy environment

- Emergent literacy is fostered in the home environment:
  - Frequency** of shared book reading is positively related to expressive vocabulary in 4-year-old children with typical development
  - Frequency of book reading is also associated with higher levels of print knowledge
  - Relationship for children with language impairment less clear
  - Quality** of shared book reading is also important – e.g., dialogic reading

Boudreau, 2005; , Lanter et al., 2012; Petrill et al., 2014; Reese & Cox, 1999; Senechal, 2006

**Quality of Shared Book Reading**

Five SBR skills/behaviours that are most predictive of later literacy development:

1. Frequent exposure to decontextualized language,
2. joint attention and child's interest,
3. adult responsiveness – creating a positive learning environment,
4. explicit teaching of meaning-related skills and code-related skills/concepts
5. and integration of language and grammar through indirect language stimulation techniques.


**Key features of an observation tool:**  
 Observe both parent and child behaviours  
 Incorporate both code- and meaning-related skills.

(Westerveld, Holt, & van Bysterveldt, 2015)

**Study Aims**

1. How frequently do parents of preschool children with ASD read to their children during a typical week?
2. What is the quality of the parent-child book reading interactions?

- Parent report
- Direct observation



**The Emergent Literacy Project**


**Participants:**

- 57 children (48 boys/9 girls) with ASD, aged 4;0 to school-entry age (M: 4.9 years).
- Sufficient verbal abilities to participate in the tasks

**Measures:**


- Standardised language and cognitive tests
- Tasks measuring print-related and meaning related emergent literacy skills
- Parent-child book reading session – video
- Home-literacy questionnaire

**Procedure:**  
 Two sessions with a qualified speech pathologist



**Participants**

| N = 57   | Mean  | SD   | Range    |
|--|-------|------|----------|
| Social Communication Questionnaire               | 15.8  | 5.8  | 5 - 32   |
| Developmental Quotient                           | 79.11 | 19.5 | 44 – 119 |
| VABS-II: Communication SS                        | 84    | 11.7 | 57 - 110 |
| VABS-II: Spoken Comm Age Equivalent <sup>s</sup> | 36    | 9.9  | 17 - 69  |
| VABS-II: Written Comm Age Equivalent             | 54    | 10.8 | 29 - 73  |
| PPVT-4 - SS                                      | 90    | 16.3 | 64 - 127 |



**Methods**


**Home literacy questionnaire** (Boudreau, 2005)

**Shared Book Reading session**

Parents were asked to read to their child like they normally would and to video the session. They were provided with two (novel) books:

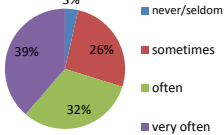
1. Pip and Posy: The Big Balloon
2. Pop-Up Peekabook! Woof Woof!

51 Videos were coded (15sec intervals using an SBR observation tool).



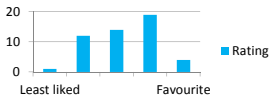
**Home literacy questionnaire - results**


**A: Frequency of SBR**



**B: At what age did you start reading to your child**  
 92.6% of parents reported they started reading to their child < 2 years of age

**C: How would you rate your child's interest in books**

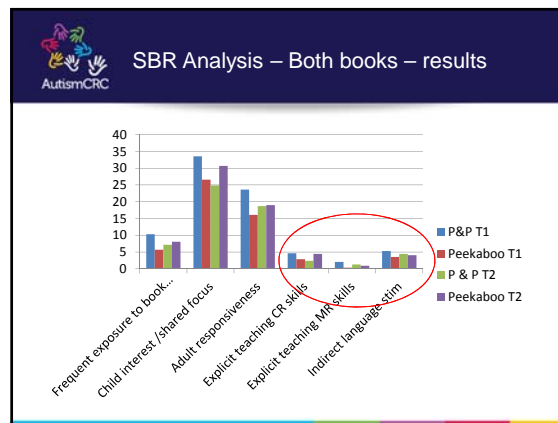



 **SBR Analysis**

- Parents spent between 1 and 7 minutes per book.
- 13 dyads chose P&P as their first book; 38 chose Peekaboo!

- Data were analysed for instances of key behaviours –
  - Frequent exposure to book language
  - Child interest /shared book focus
  - Adult responsiveness
  - Explicit teaching of:
    - code-related skills
    - Explicit teaching of meaning-related skills
  - Indirect language stimulation


**Each behaviour** consisted of **four levels** (e.g., 1a labelling, 1b asking simple questions, 1c relate to outside here and now, 1d emphasising low frequency words) – total scores are used for the following analyses.




 **Some Conclusions**


- Most families create a relatively 'rich' home literacy environment – recruitment bias?
- Parents are responsive and children pay attention – further analysis needed to understand the links between autism severity and social interaction / shared book reading.
- Few instances** of explicit teaching of code- or meaning-related emergent literacy skills.
- Few instances** of indirect language stimulation.

**Further analysis needed to:**  
Determine links between children's language level / cognitive level and SBR behaviours


 **Clinical implication**

- The importance of SBR with children with ASD should not be underestimated.
  - Social interaction is crucial to learning language
  - Vocabulary important predictor of reading comprehension
  - SBR helps foster story comprehension in typically developing children.



 **Future directions**

- Currently investigating the effects of **parental shared book reading intervention** on the book reading behaviours and emergent literacy skills of preschool children with ASD
- Longer term: Continue this line of research to **improve literacy outcomes for children with ASD**

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[m.westerveld@griffith.edu.au](mailto:m.westerveld@griffith.edu.au)

 @MWslp



  
aeiou  
FOUNDATION  
for children with autism

  
Griffith  
UNIVERSITY

  
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spectrum  
AUSTRALIA

  
The Sydney  
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