



University of
Salford
MANCHESTER

The impact of traumatic experiences on cognitive and behavioural functioning in children with FASD

Alan Price – PhD Student

Background

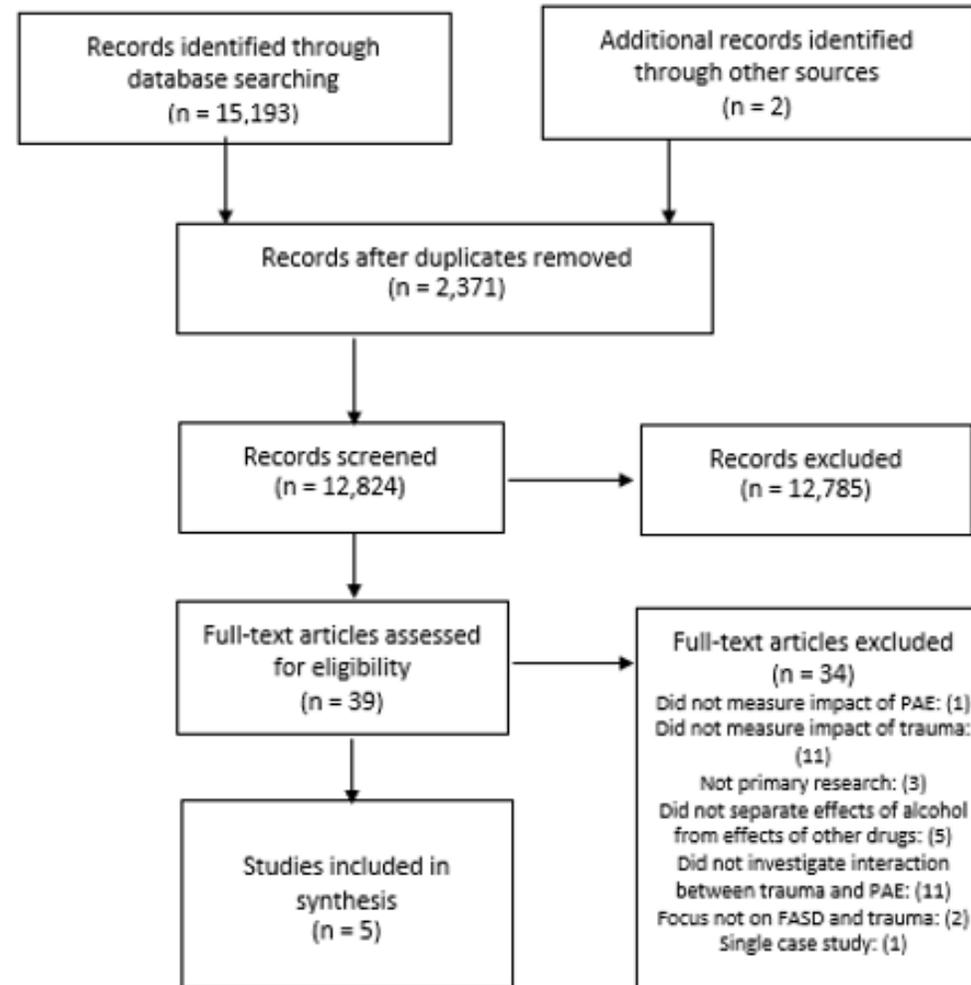


- Collaboration between UK national FASD clinic and University of Salford
- Children suspected of FASD often have history of abuse, neglect, or other traumatic experiences prior to fostering or adoption
- Symptoms of abuse or neglect similar to symptoms of FASD
- Do children with both exposures have a different profile than children with just prenatal alcohol exposure?
- Important for service providers to predict outcomes and recommend services or interventions

Systematic review



- 8 online databases and reference sections
- 15,193 records
- 39 full articles
- 5 papers in final synthesis



Trauma vs (PAE + trauma)	PAE vs (PAE + trauma)
<p data-bbox="0 68 1243 114">Hyter 2012 (quasi-experimental, n=106)</p> <p data-bbox="0 157 1243 257">Clinically significant language delays and social communication difficulties in both groups</p> <p data-bbox="0 299 1243 349">‘Both’ group had more language delays than ‘just trauma’ group</p> <p data-bbox="0 392 1243 442">No significant difference between groups in social communication</p>	<p data-bbox="1243 68 2548 114">Coggins et al 2007 (cross-sectional, n=573)</p> <p data-bbox="1243 157 2548 207">Substantial comorbidity between PAE and trauma</p> <p data-bbox="1243 249 2548 299">Sample as a whole had poor language and social communication</p> <p data-bbox="1243 342 2548 392">No relationship between trauma and severity of outcomes</p>
<p data-bbox="0 468 1243 514">Henry et al 2007 (quasi-experimental, n=274)</p> <p data-bbox="0 556 1243 606">‘Both’ group had more delays/deficits in: attention, memory, language.</p> <p data-bbox="0 649 1243 699">No difference between groups in: visual processing, motor control</p> <p data-bbox="0 742 1243 792">‘Both’ group had lower verbal, non-verbal and composite IQ scores.</p> <p data-bbox="0 835 1243 1028">Children in ‘both’ group rated as more problematic than ‘just trauma’ group by parents and teachers in the following: hyperactivity, attention, impulsivity, restlessness; and by parents only in the following: oppositional behaviour, social problems.</p>	<p data-bbox="1243 468 2548 514">Koponen et al 2009 (cross-sectional, n=38)</p> <p data-bbox="1243 556 2548 606">Full sample had high levels of cognitive and behavioural problems.</p> <p data-bbox="1243 649 2548 742">Being older when removed from abusive home predicted more cognitive and behavioural problems</p> <p data-bbox="1243 785 2548 885">More traumatic experiences predicted attachment and behavioural problems, but not cognitive deficit.</p>
	<p data-bbox="1243 1082 2548 1128">Koponen et al 2013 (qualitative, n=34)</p> <p data-bbox="1243 1170 2548 1313">Children who lived with abusive parents appeared to have more difficulties with attachment, concentration, hyperactivity and developmental delay than those adopted at birth.</p> <p data-bbox="1243 1356 2548 1406">Difficult to draw any conclusions due to study design</p>

Some gaps in the literature



- More comprehensive studies into effect of PAE within trauma
- No studies into executive functioning, empathy, brain activity
- Lack of studies into intelligence and emotional/behavioural difficulties
- No study into the experiences of parents/carers of children with both exposures

Original studies



Behavioural/emotional/social

- Online survey of international sample of parents/carers of 253 children aged 4-16 with FASD – questions about trauma, behaviour and empathy

Neurocognitive

- Local sub-sample of those children, aged 8-14, came in to university for assessment of IQ, executive functioning and brain activity

Experiences of parents

- 12 sets of parents/carers of children from cognitive assessment were interviewed about their experiences.

Behavioural Emotional Social



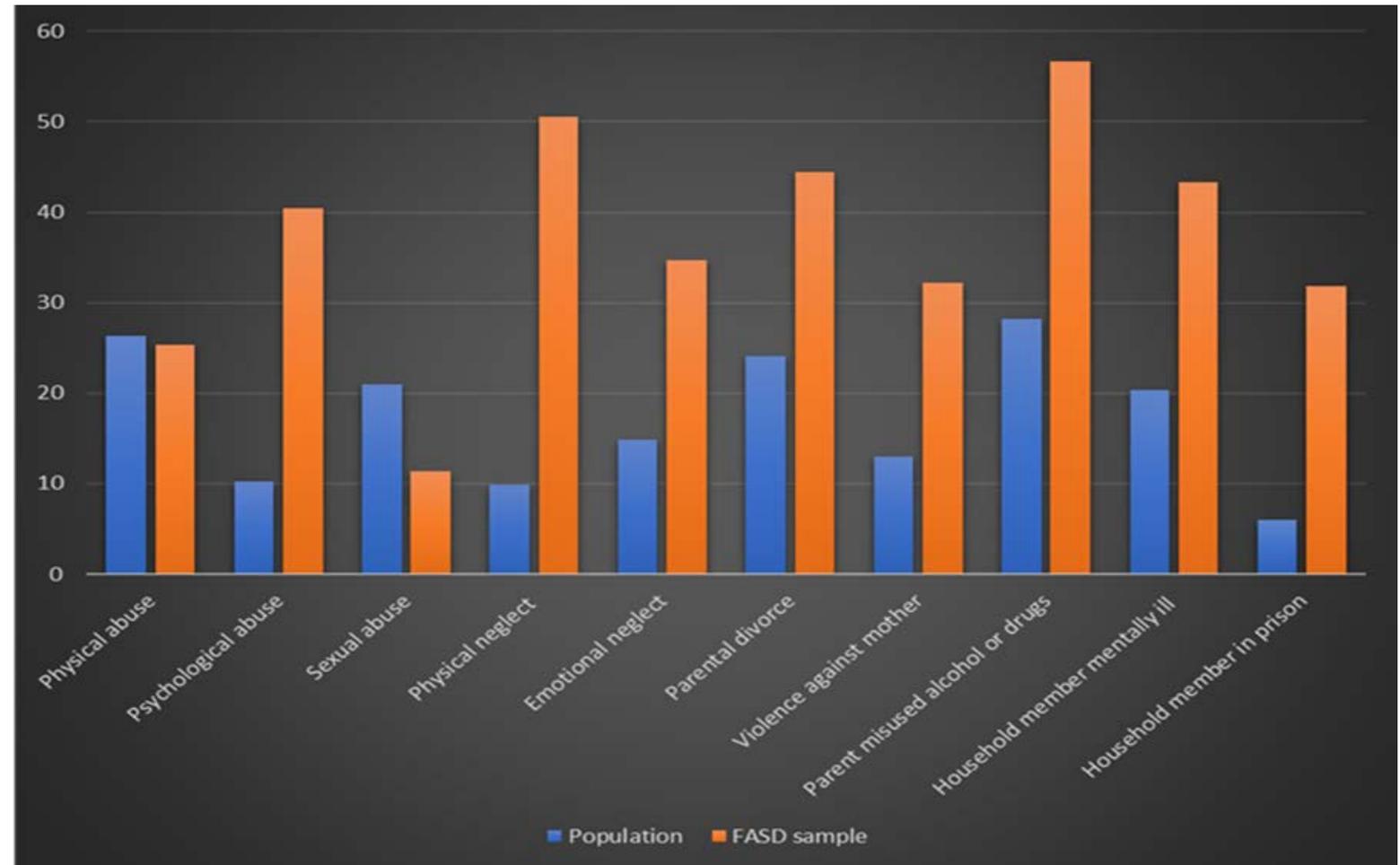
University of
Salford
MANCHESTER

- Online survey advertised via social media
- Completed by parents/cares of 253 children aged 4-16 with FASD from 8 countries, but mostly from UK, USA and Canada
- Adverse Childhood Experiences (ACE) questionnaire
 - Abuse, neglect, witnessed domestic violence, lived with parent that was an addict, mentally ill or imprisoned, experienced divorce
- Griffith Empathy Measure
 - Cognitive and affective empathy
- Strengths and Difficulties Questionnaire
 - Peer problems, conduct problems, hyperactivity, emotional problems, prosocial behaviour

Adverse Childhood Experiences



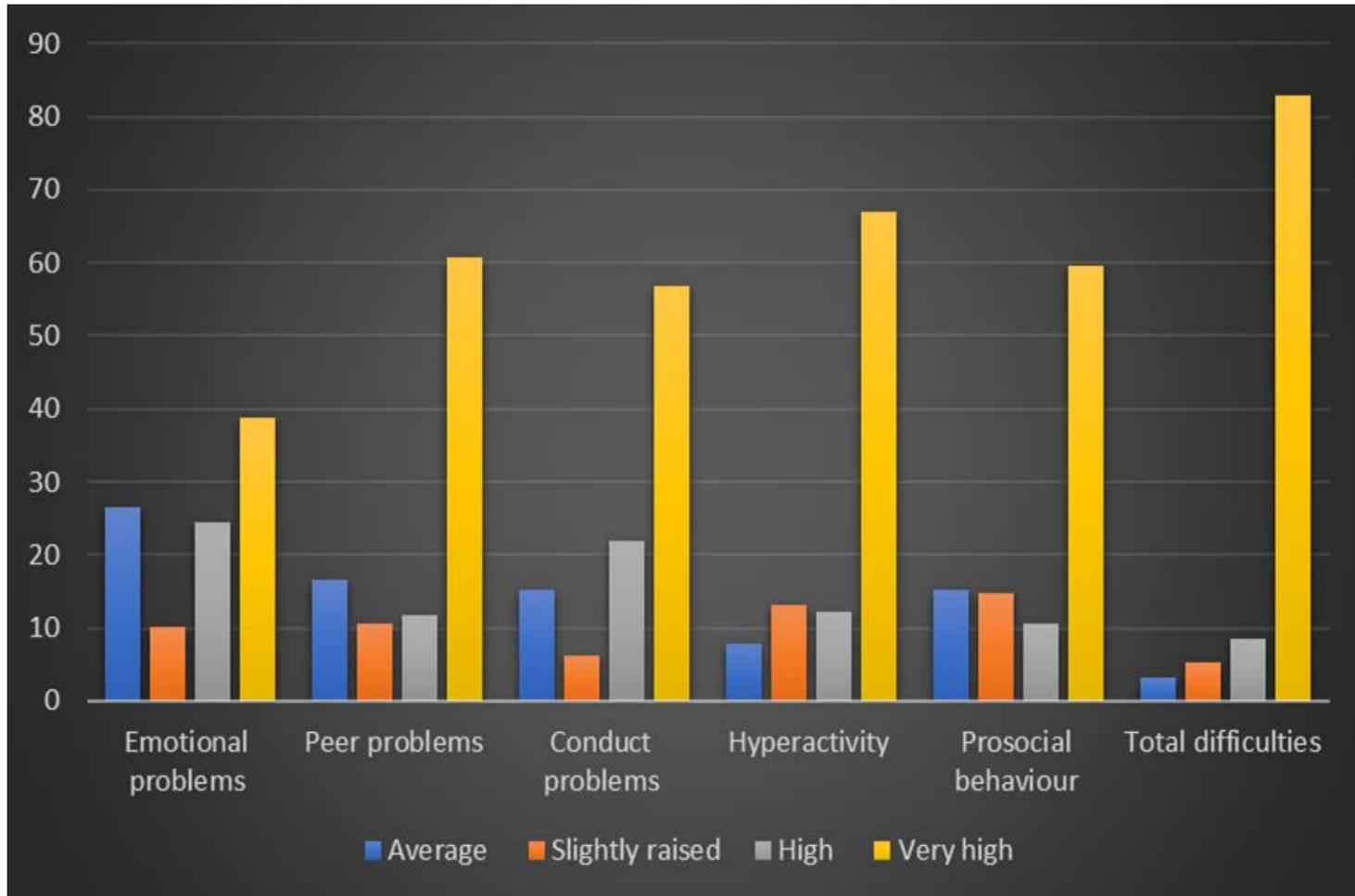
- Sample of children with FASD scored significantly higher than population data on all ACE's except for physical and sexual abuse.
- Physical abuse score was similar to population data and sexual abuse score was lower.
- However, these Figures probably underestimate the true scores.
- Survey was completed by (mostly adoptive) parents on behalf of their children and many reported being unsure of neglect or abuse.



Strengths and difficulties Questionnaire



University of
Salford
MANCHESTER



- SDQ is standardised and gives a score of average, raised, high or very high
- Most children in general population will score average on every scale.
- Majority of FASD sample of children were very high on every scale. Prosocial is reverse scored so a high score indicates a lack of prosocial behaviour
- Overall, 82% of FASD children were in very high for overall behavioural difficulties.
- On empathy, FASD children in every age range had significantly lower empathy scores than normative data, with high effect sizes.

Relationship between ACEs and behavioural/emotional/social functioning



- Divided children by presence/absence of maltreatment (abuse or neglect)
- No difference in empathy or behavioural difficulties related to maltreatment
- No correlation between ACE score and empathy
- Weak positive correlation between ACE score and SDQ score ($r=.23$, $p<.001$)
- On subscales, only peer problems ($r=.17$, $p<.01$) and conduct problems ($r=.25$, $p<.001$) were significant.
- No, or weak impact of trauma on behavioural/social/emotional functioning in children with FASD

Neurological and cognitive studies



University of
Salford
MANCHESTER

- Sub-sample of 25 children aged 8-14 from England came into University of Salford for further assessment.
- 3 groups: 13 'just FASD', 12 'FASD+maltreatment', 15 TD controls

Intelligence

- Wide Range Intelligence Test (WRIT) – brief measure of IQ

Executive functioning

- Go/No-go – inhibitory control
- Tower of Hanoi – working memory

Brain activity

- Functional near infra-red spectroscopy (fNIRS)

fNIRS

WRIT

Go/No-go



University of
Salford
MANCHESTER



Here is what the mole looks like



Wack it as fast as you can
before it gets away!

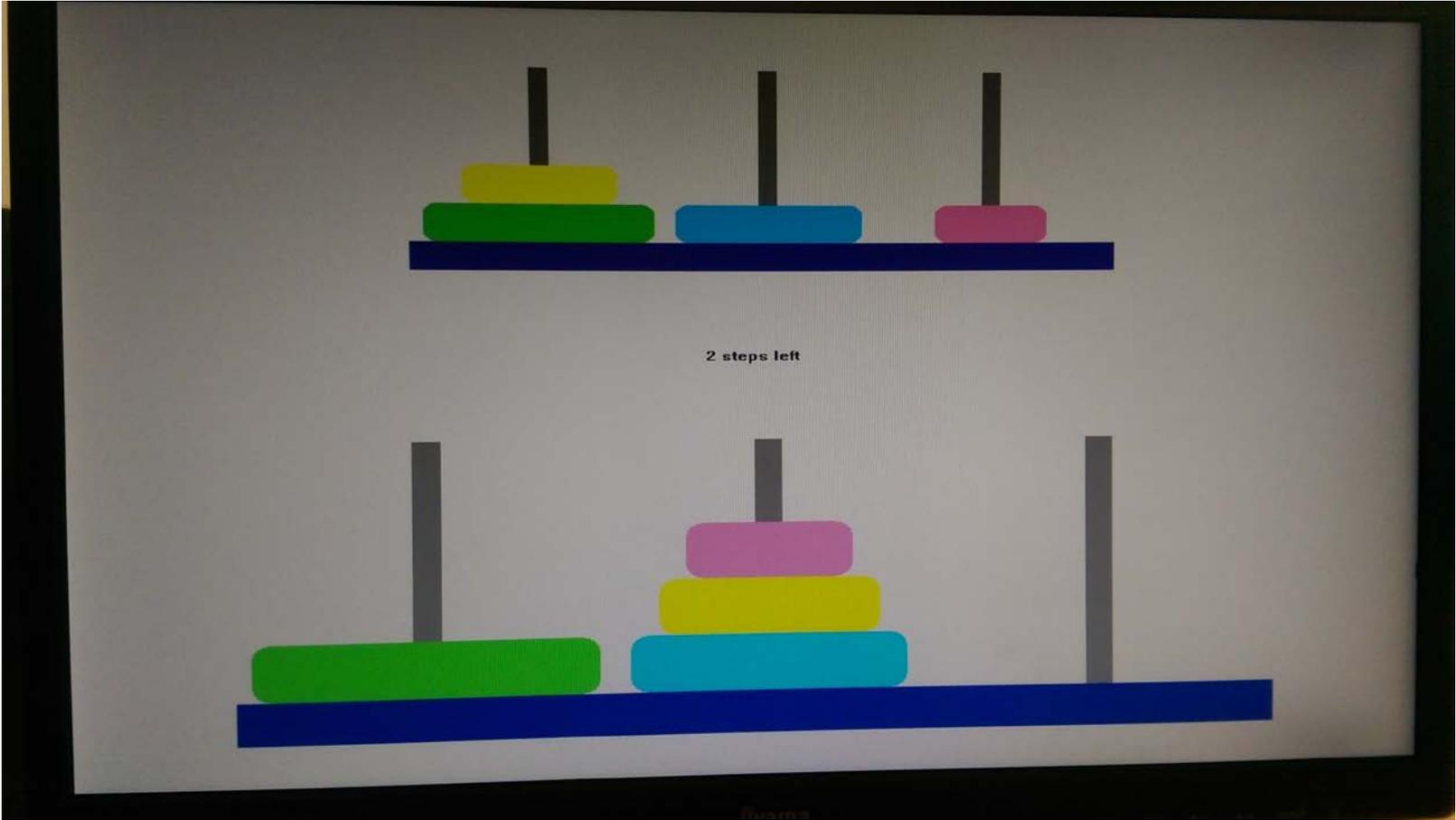
Press the space bar to continue

Sometimes, an eggplant will pop
up in your garden.
The eggplant looks like this.



Don't squash the eggplant!

Tower of Hanoi



Neurological and cognitive studies



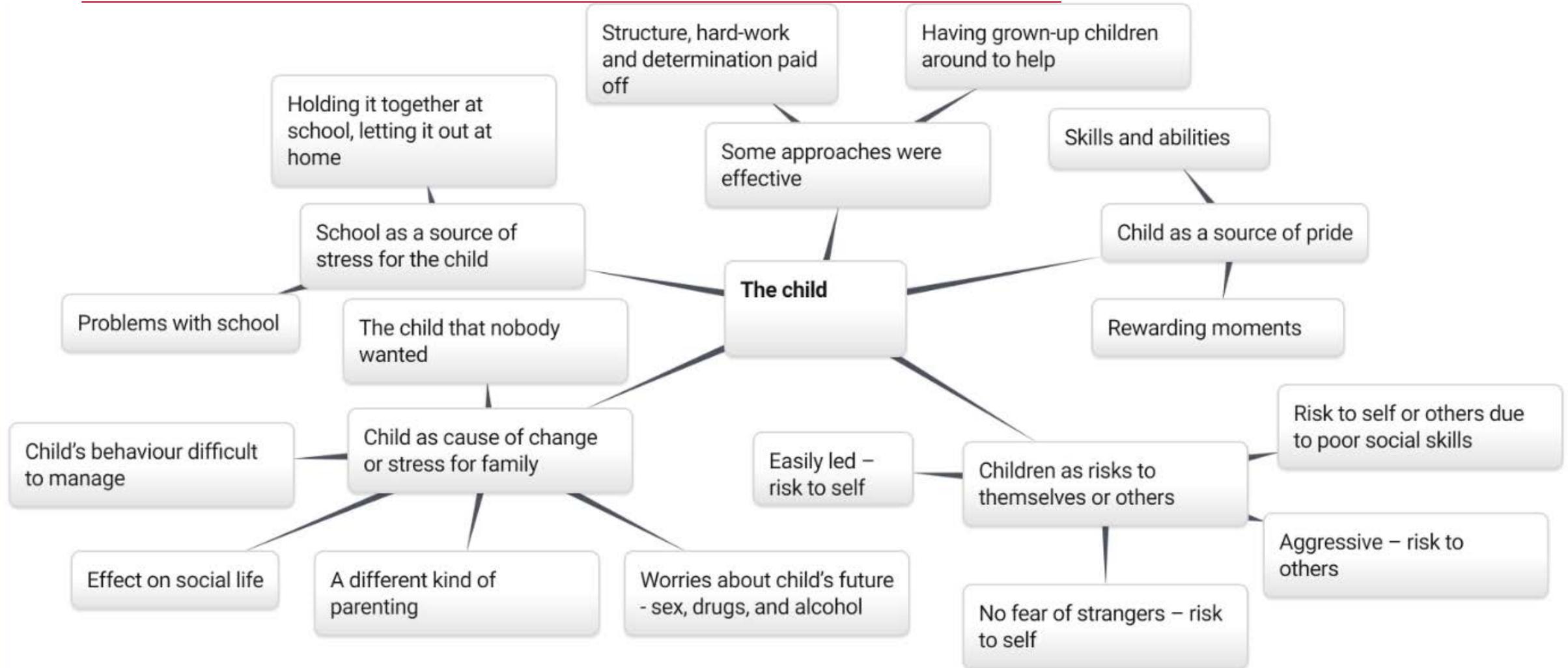
- Both FASD groups (maltreatment and no maltreatment) had average estimated IQ scores in the normal population range (85-115)
- Control group had average estimated IQ score in above average range
- No normative data for EF tasks. No difference between 3 groups – FASD children had similar results to controls.
- fNIRS also showed no difference in PFC activation between the three groups
- No effect of maltreatment identified on cognitive or neurological functioning in children with FASD

Experiences of caregivers

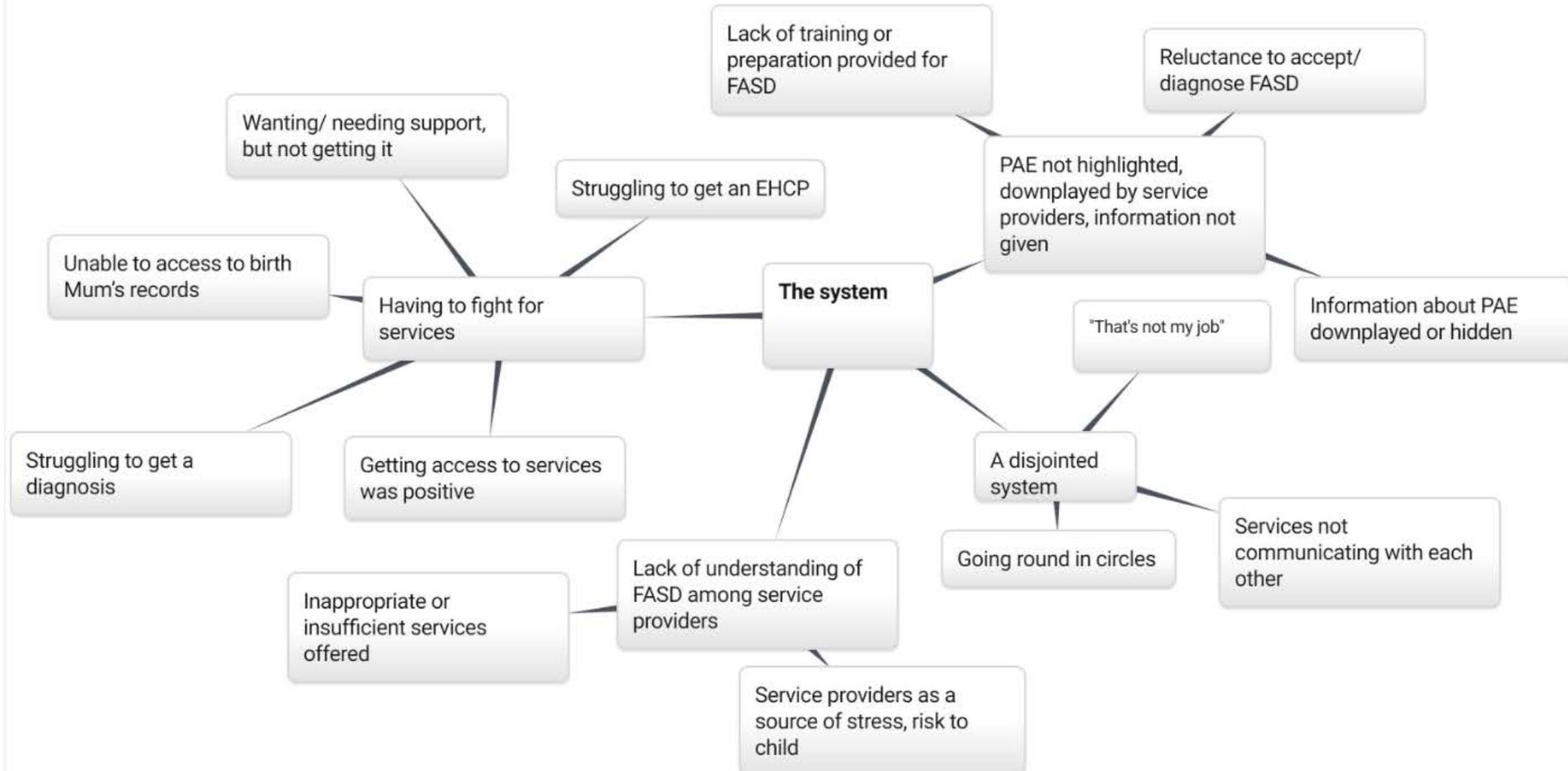


- Final study – experiences of caregivers
- 12 interview with families of 17 of the FASD children aged 8-14 from neurocognitive study
- About half of those children had a history of maltreatment
- Questions on cognitive, daily living, behavioural, social difficulties of children, and how these affected parents and other family members
- Thematic analysis identified 9 themes, which formed 2 overarching domains

The Child



The system



Experiences of caregivers - trauma



- Parents of children with a history of maltreatment described those events
- Parents of children with and without maltreatment contributed to all themes
- Children with history of maltreatment qualified for services designed for trauma/attachment
- Children without maltreatment were also offered these services
- Nothing designed specifically for FASD

Summary and conclusions



- Children in this population with FASD had high levels of ACEs including maltreatment
- Low empathy, high levels of behavioural/emotional/social difficulties
- Neurological and cognitive functioning was in normal range
- **Little or no impact of trauma on cognitive and behavioural functioning identified in children with FASD**

Summary and conclusions



- Caregivers reported difficulties and stress associated with children's difficulties, but lack of services was described as being even more difficult.
- More studies needed, but in children with both exposures, PAE may be a better explanation of difficulties than trauma.
- Children with both exposures currently accessing services designed for trauma/attachment, but if anything PAE is more responsible for their difficulties
- **Services need to be designed specifically for FASD**

Thank you



University of
Salford
MANCHESTER

References / questions

a.d.price2@salford.ac.uk