

Delineating polysubstance abuse from Alcohol use in Fetal Alcohol Spectrum Disorders: 2018 Data from the UK national specialist clinic

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Learning Disabilities
Services

Declaration of interest related to FASD

Payments received directly only from main NHS employer
Volunteer medical advisor various FASD charities
Grant coapplicant for 2 current research projects.

No conflict of interests for this talk

Why important

- Alcohol established teratogen
- Animal studies can delineate
 - Limited as not necessarily always representative of primate models
- Humans often take more than one thing at a time
- Studying these issues in Human samples challenging
- DSMV requires the exclusion of other factors that could explain the presentation



What do we know

- Alcohol has strong effects
- Others effects differ
- Evidence is limited however and continues to grow
- Need to balance biological plausibility as well as observable findings

Behnke et al 2013 (Paediatrics)

TABLE 2 Summary of Effects of Prenatal Drug Exposure

	Nicotine	Alcohol	Marijuana	Opiates	Cocaine	Methamphetamine
Short-term effects/birth outcome						
Fetal growth	Effect	Strong effect	No effect	Effect	Effect	Effect
Anomalies	No consensus on effect	Strong effect	No effect	No effect	No effect	No effect
Withdrawal	No effect	No effect	No effect	Strong effect	No effect	*
Neurobehavior	Effect	Effect	Effect	Effect	Effect	Effect
Long-term effects						
Growth	No consensus on effect	Strong effect	No effect	No effect	No consensus on effect	*
Behavior	Effect	Strong effect	Effect	Effect	Effect	*
Cognition	Effect	Strong effect	Effect	No consensus on effect	Effect	*
Language	Effect	Effect	No effect	*	Effect	*
Achievement	Effect	Strong effect	Effect	*	No consensus on effect	*

* Limited or no data available.



What we know cont. looking at more details

- Cannabis (Fried 1998)
 - WISC III: Block design and picture completion most affected by cannabis
 - Visual scanning and hypothesis testing more affected in executive function tests
- Other drugs less well established and delineated



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What we did

- Need to differentiate the unique profile of FASD
- Research samples can be limited though ethical considerations
- Naturally occurring differences and natural experiments may offer a way to study this
- Such samples exist in clinical samples but also have inherent biases

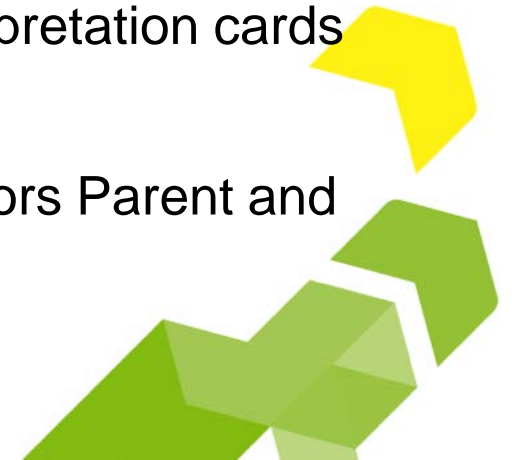


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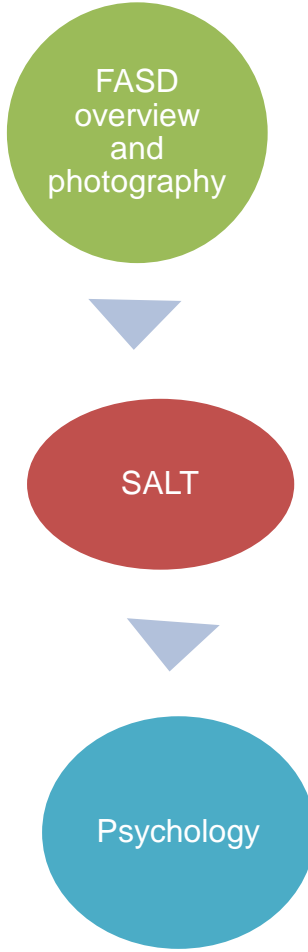
Measures used in the clinic

- 4 Digit FASD analysis
- (3d Facial recognition)
- Semi structured FASD history Questionnaire
- SCQ
- DISCO
- ADHD Screening Questionnaire
- DBCL parent and teacher
- Vineland II
- Communication Checklist for Children/ Adults
- Short Sensory Profile
- WAIS IV / WISC IV/ WISC V
- Delis Kaplan Executive Function Tests
- BRIEF parent and teacher
- CELF 4 (3 initially)
- TROG
- Social Interpretation cards
- PSI
- Child Connors Parent and teacher
- SRS



Clinic pathway

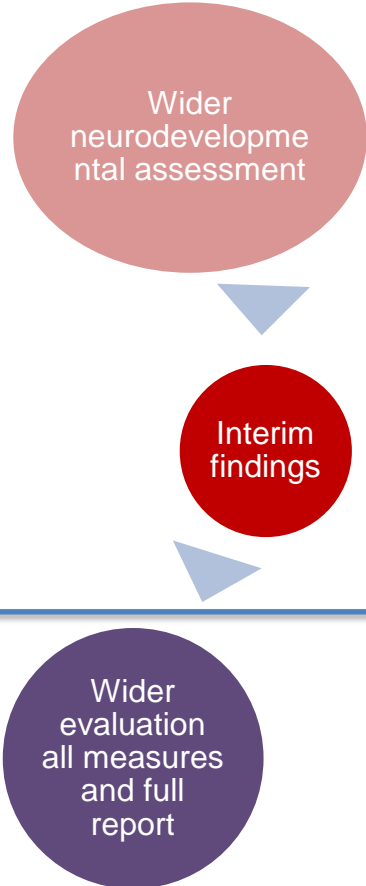
Day 1



Total face to face
12 hrs

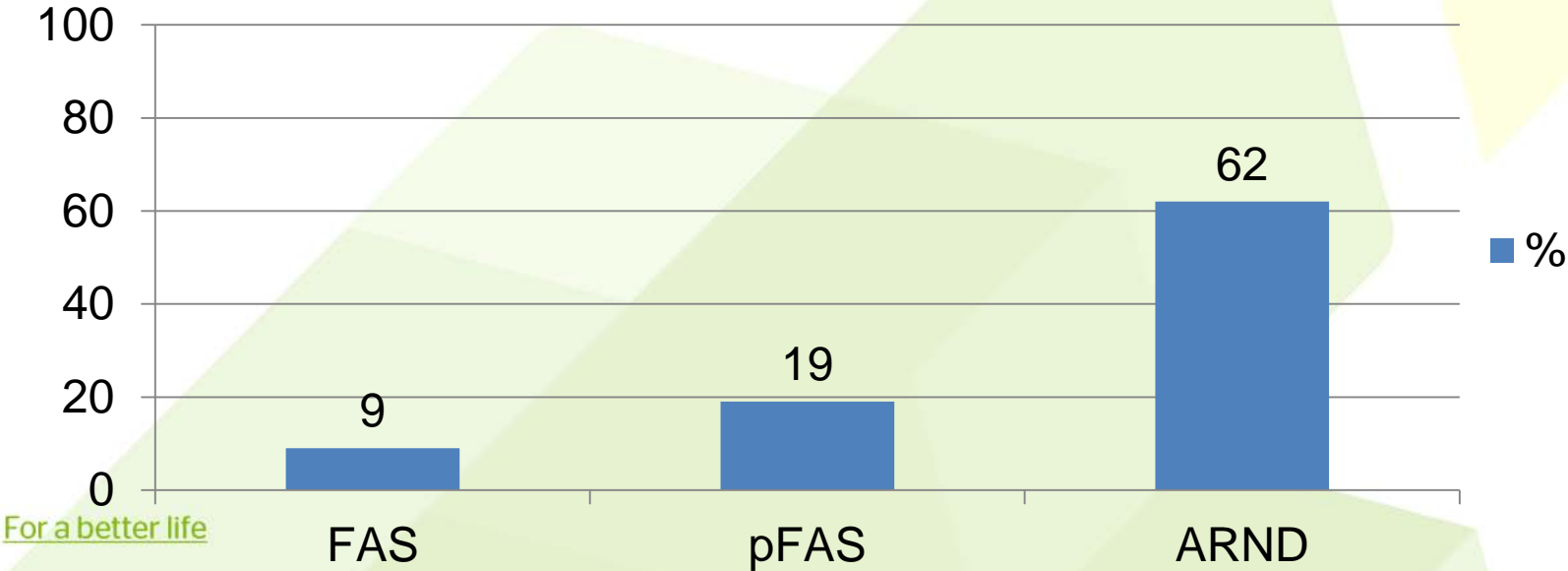
Indirect evaluation
9 hrs

Day 2



FASD Diagnosis

	n
FAS	10
pFAS	19
ARND	62
	91



n

Group	<i>n</i>
Alcohol only	23
Confirmed other substance	68
	91

- Participants were removed from the analysis if there was no alcohol, or only suspected alcohol/substances without relevant confirmation.

Comparisons between means - ANOVA

- Preliminary analysis
- Comparisons of means conducted between means of Prenatal Alcohol Exposure only and Prenatal Polysubstance Abuse groups on:
 - Cognitive Profile (WISC-IV)
 - Vineland
 - Sensory behaviour (Short Sensory Profile)
 - Behavioural and emotional disturbance (Developmental Behaviour Checklist)

Cognitive Profile: Alcohol vs Polysub (n = 65)

WISC-IV Index	<i>p</i>
Verbal Comprehension	.05*
Perceptual Reasoning	.16
Working Memory	.02*
Processing Speed	.23
Full Scale IQ	.11
General Ability Index (Overall IQ when FSIQ uninterpretable)	.24

This data suggests Children within the Prenatal Alcohol Only group may have more impacted areas of cognitive weakness compared to the Polysubstance Abuse group

N.B. For Verbal comprehension Index the Brown Forsythe's test was used as it violated an assumption

Sensory Profile: Alcohol vs Polysub

Short Sensory Profile Scale	<i>p</i>
Tactile Sensitivity	.03*
Taste/Smell Sensitivity	.24
Movement Sensitivity	.59
Under responsive/Seeks Sensation	.38
Auditory Filtering	.82
Low Energy/Weak	.76
Visual/Auditory Sensitivity	.92
Total Score	.18

- This data suggests the Polysubstance Abuse group may have more difficulties in tactile sensitivity.
- For tactile sensitivity the alcohol only group were classed as 'probably different', whilst the polysubstance group were 'definitely different' from normal data.

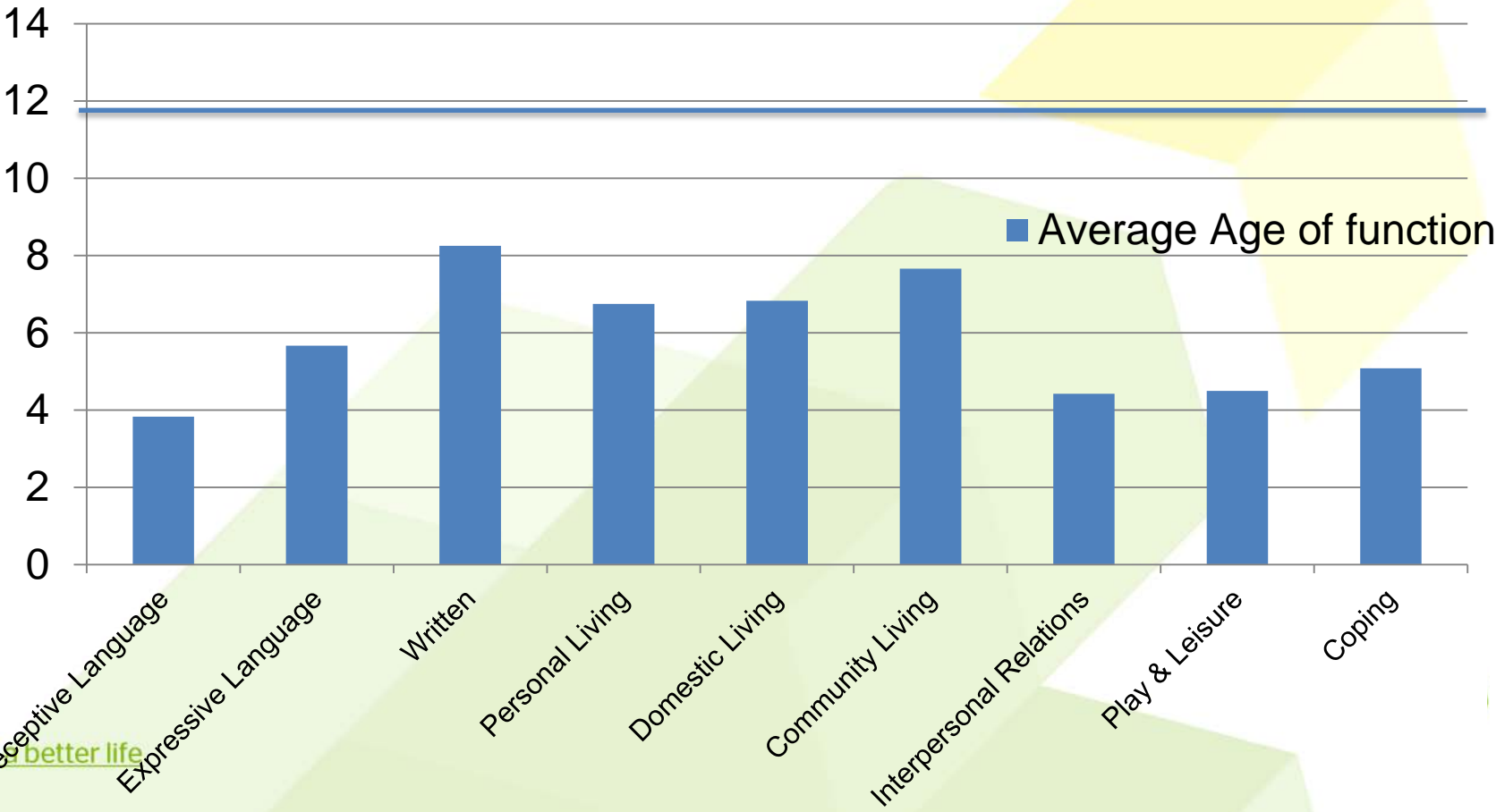
Vineland

Vineland Scale	<i>Average age of function</i>
Receptive Communication	3 Years 10 Months
Expressive Communication	5 Years 8 Months
Written Communication	8 Years 3 Months
Personal Daily Living	6 Years 9 Months
Domestic Daily Living	6 Years 10 Months
Community Daily Living	7 Years 8 Months
Interpersonal Relationships	4 Years 5 Months
Play and Leisure	4 Years 6 Months
Coping Skills	5 Years 1 Month

Vineland

Mean age = 11.93, Median age = 11

Average Age of function



Vineland: Alcohol vs Polysubstance abuse

Vineland Scale	<i>p</i>
Receptive Communication	.43
Expressive Communication	.18
Written Communication	.81
Personal Daily Living	.95
Domestic Daily Living	.99
Community Daily Living	.38
Interpersonal Relationships	.19
Play and Leisure	.42
Coping Skills	.97
Communication Standard Score	.09
Daily Living Standard Score	.06
Socialization Standard Score	.03*

- Children who were exposed to alcohol only had worse socialization skills compared to those exposed to polysubstance abuse

Limitations

- Sample size – alcohol only groups need to be larger so we can further delineate effects of alcohol only on behavioural presentations in FASD
- Clinic sample

Conclusions

- It is vital to be able to differentiate
- Our sample was small but we have begun to show possible differences
- Need to look in more detail at data but sample size affects the outcomes
- Shows that this method of using natural experiments can help to delineate these issues



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FASD Clinic

The screenshot shows a web browser window displaying the NHS website for the Foetal Alcohol Spectrum Disorders (FASD) clinic. The browser's address bar shows the URL www.sabp.nhs.uk/services/foetal-alcohol-spectrum-disorder-fasd-clinic. The website header features the NHS logo and the text "Surrey and Borders Partnership NHS Foundation Trust". A navigation menu includes links for Home, About Us, News & Events, Equality & Human Rights, Accessibility, Contact, Services, Advice & Guidance, Your Views Matter, Your Involvement, Members, Professionals, and Jobs. A search bar is also present. The main content area has a breadcrumb trail: "You are here: Home > Our Services > Foetal Alcohol Spectrum Disorders clinic". On the left, a sidebar lists "Our Services" including Mental Health, Learning Disabilities, Drug & Alcohol, Eating Disorders, and the "Foetal Alcohol Spectrum Disorders clinic" (which is highlighted). Below this, a list of links includes "What we do", "How we are unique", "Referrals", "Billy's story", "FAQs", "Meet the team", "Resources & research", "Contact us", and "Treatment & Support". The main heading reads "Welcome to our Foetal Alcohol Spectrum Disorders clinic". Below the heading is a photograph of children running in a playground, with a caption "Playground running". A text box below the photo states: "Foetal Alcohol Spectrum Disorders (FASDs) describes a range of effects that can occur in an individual who was exposed to alcohol in the womb." The Windows taskbar at the bottom shows the time as 22:39 on 26/06/2014.