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Abstract

Background: At least 60% of young people in the UK who are accessing youth justice services present with speech, language and communication difficulties which are largely unrecognised. The contributing reasons for this are discussed suggesting that early language difficulty is a risk factor for other problems such as literacy difficulties and educational failure that may increasingly put the young person at risk of offending. Opportunities for identification and remediation of language difficulties before young people reach youth justice services are also outlined.

Aims: To examine language skills in a sample of children in a secure children's home aged 11 to 17 years.

Methodology: A sample of 118 males were routinely assessed on four CELF subtests and the BPVS.

Results: Around 30% of the participants presented with language difficulties scoring 1.5SD below the mean on the assessments. Despite them entering the home because their vulnerability was recognised; only two participants had a previous record of language difficulties. 20% of the participants had a diagnosis of mental illness, 50% had a history of drug abuse and 31% had looked-after status prior to entry to the home.

Conclusions and implications: Children who are experiencing educational or emotional difficulties need to be routinely assessed for speech, language and communication difficulties. More population based approaches to supporting the development of oral language skills in children and young people are also supported.

What is already known on the subject?

A significant number of young people in contact with youth justice services have speech, language and communication difficulties. Language difficulties may be a risk factor for offending.

What this paper adds?

This paper reviews the compounding risks that early language difficulties may lead to considering social and behavioural factors that link to language development in adolescence. The study provides language data on children who are in a secure children's home **within the youth** justice system. This population has not been studied before. The findings suggest that language difficulties are rarely recognised despite these young people being recognised as vulnerable. Given re-offending rates and the high costs of residential placement, further research is needed into the economic benefits of supporting language development in vulnerable populations.

Introduction

The World Health Organisation recognises the importance of language and literacy, stating that communication and interpersonal skills are one of five areas of globally relevant life skills (WHO 1999). The United Nations Declaration of Human Rights (1948) states that barriers to communication affect an individual's ability to relate to, and interact with, others. This affects their right to realise social and cultural assets and develop their personality, (Article 22), to an education (Article 26) and to access justice systems (Article 7). In 2008, the Bercow Review of services for children with speech, language and communication needs (Department for Children, Schools and Families 2008) confirmed international opinion that communication is an essential life skill, stating that

“the centrality of communication is not simply a personal statement of value.Communication is a fundamental Human right.” (p. 16).

However, it is recognised that at least sixty per cent of young people **accessing** youth justice services, in the UK, have speech, language and communication needs (SLCN) that significantly impact on their ability to benefit from education and other interventions offered by youth justice agencies (Bryan 2004, Bryan et al 2007, Gregory and Bryan 2011). **This compares to rates in the general population where estimates vary from 5% (Larson and McKinley 1995 to 14% (McLeod and McKinnon 2007).** There are differences in government policies on incarceration of children across the developed world, and studies may use different assessments and cut off points for disorder. However, levels of difficulty far in excess of the general population have been reported in other countries. In Australia, 52% of young male offenders on community orders were classified as language impaired (Snow and

Powell 2008), and more than 20% of incarcerated females in the USA were found to be language impaired (Sanger et al 2001).

These figures suggest that language and communication difficulties may be risk factor for offending. This may be a direct risk or may result from other risks that link to language difficulty eg vulnerability for compromised literacy, and the risks of low levels of language and literacy for educational achievement (Snow 2009). This might be understood as a compounding risk model where low levels of language lead to other risks, such as low level of educational achievement. Speech and language difficulties, low levels of educational achievement and literacy difficulties are risk factors for mental health problems and offending (Tomblin *et al* 2000).

Also language difficulty is a risk factor for development of behaviour problems (Lindsay, Dockrell and Strand 2007, Redmond and Rice 2002) and difficulties with peer interaction creating a vulnerability for association with other young people who are involved in criminal activity (Quinton, Pickles, Maughan and Rutter 1993). Brownlie *et al's* (2004) and Smart *et al's* (2003) longitudinal studies show language impairment is a risk factor for offending, but a causal relationship has not been established. Clegg *et al's* (2005) longitudinal study showed that one third of children with SLCN will develop mental health problems if untreated, with criminal involvement in over half of cases. More recent evidence from a longterm Danish study (Mouridsen and Hauschild 2009) indicates that boys with severe expressive language problems were significantly more likely to be convicted of sexual offences. There is also strong evidence to link SLCN with challenging and antisocial behaviour, but this may be partly due to hidden communication difficulties being labelled as behavioural problems (Beitchman *et al* 2001). Further research needs to

consider the circumstances under which compromised language development interacts with a background of psychosocial disadvantage to increase the risk of offending (Snow et al 2011).

One of the advantages of a compounding risk model approach is that as each risk occurs there is a **potential** opportunity to intervene. Similarly where a child or young person's profile becomes complex (eg presenting with language difficulty, behavioural issues and lack of engagement), language intervention **may be** advantageous in that it addresses the language problem directly, but it **may** also better equip the young person to engage in verbally mediated assessments and interventions to address their other problems. **This was the perception of staff working in a community youth offending team (Bryan and Gregory 2013), although further research is needed to verify these benefits in offender populations.**

The high levels of SLCN found in young people who are in contact with youth justice services, should not come as a surprise, given that they may have a number of vulnerabilities. (The term 'in contact with' is used to denote involvement which may vary from help to prevent offending, management of offenders in the community and management of offenders who are incarcerated.) These young people tend (although not necessarily) to have an early background where there are disadvantages. These disadvantages may relate to factors such as: other developmental problems, unstable patterns of parenting with or without admission into care, early substance abuse and difficulties at school (Bromley Briefing 2014). Looked after children (those who have become the responsibility of statutory services because the child is at risk of significant harm) make up 33% of boys and 61% of girls in custody (compared to 1% of all children in England) (Kennedy 2013).

A study of looked after children in custody in England showed that half of the children interviewed did not know who would be collecting them on the day of release (HM Inspectorate of Prisons 2011). A study of the educational background of young people in custody showed that 88% of boys and 74% of girls had been excluded from school; and 36% of boys and 41% of girls said they were 14 years or younger when they were last in education (Murray 2012). 25% of children involved in the youth justice system have identified special educational needs, 46% are rated as under achieving at school and 29% have difficulties with literacy and numeracy (Youth Justice Board 2006). In many cases their language problems are either not recognised or not treated. Opportunities for intervention are therefore not taken and once children reach secondary school, language problems are less likely to be diagnosed given that interaction or social problems tend to be labelled as behaviour problems (Beitchman et al 2001).

Difficulty in developing speech and language skills is one of the most common developmental problems that children may encounter. **Estimates of prevalence vary with** six per cent of children have SLCN in the absence of other developmental problems **reported** (Law et al 2013) **rising to** 31% reported in areas of lower socio-economic status (Enderby and Pickstone 2005, **Hart and Risley 1995**). Some of these children may recover but research suggests that their educational needs persist throughout the lifespan (Durkin et al 2009); and they are more likely to require ongoing support (Conti-Ramsden and Durkin 2008).

Children who commence school with language and communication difficulties are immediately disadvantaged (Snow 2009). Children who enter school with language difficulties are at risk for literacy difficulties (Catts et al 2002), behavioural problems (Tomblin et al 2000) and psychological problems (Beitchman et al 2001).

Comprehension difficulties in particular make children very vulnerable in relation to education (Hooper *et al* 2003). More recent longitudinal studies also confirm that specific language impairment (SLI) has a long term effect on a child's development. Freed *et al* (2011) showed that primary school children with pragmatic language difficulties scored at the low end of the normal range for literacy, while those with SLI scored one or two standard deviations below the mean for literacy. Hesketh and Conti-Ramsden (2013) showed that eleven year olds with a history of SLI were significantly impaired on sentence repetition even where the SLI had resolved. Children with persisting SLI have been shown to achieve a lower level of educational attainment than their peers. Conti-Ramsden *et al* (2009) showed that while 88% of children in their final year of compulsory schooling achieved at least one of the expected qualifications, only 44% of children with persisting SLI achieved this.

In the main, assessment of young offenders with language difficulties **is not sufficiently longitudinal to ascertain whether they have persisting SLI, or indeed whether they meet the criteria described for SLI**, therefore language difficulties in young offenders have been described as non-specific (Snow and Powell 2011). However, the ages of samples such as those described by Bryan *et al* (2007) and Snow and Powell (2011) lends some weight to suggestions that language problems are persisting over time at least into late adolescence. We do know that 15% of young offenders have statements of educational needs and low levels of literacy are also reported (Davis *et al* (2004).

One of the key questions about young people in contact with criminal justice is: why their SLCN has not been identified, or indeed remediated long before they are in contact with youth justice services? **We might particularly question this as more recent longitudinal studies of population samples of children suggest that language**

difficulties can be identified at an earlier age. For example, Chiat and Roy (2013, 2008) followed up children aged 4-5 years and 9-11 years who had been referred to clinical services with concerns about language at two to three years of age. They showed that receptive language problems at 2-3 years were the strongest predictor of general language outcomes.

These findings provide a strong evidence base to support the need for systematic screening of children to identify speech, language and communication difficulties. Unlike countries, such as Denmark, the UK does not systematically screen children's language at an early age, prior to school entry or prior to entry to secondary school. While the national curriculum changes in 2014 (DfES 2014) do include more emphasis within the English curricula on teaching oral language skills, telling stories etc, the testing regime remains paper tests of language exclusively via literacy. Opportunities are being lost for early identification, although it could be argued that any child found to be underperforming in literacy, may well have an underlying or confounding difficulty with oral language and should therefore have their language skills investigated.

There is also evidence to support more systematic, population based approaches to language intervention. There is strong evidence for the effectiveness of population based language intervention, be it environmental (Pickstone et al 2009) early intervention from SLT (Gallagher and Chiat 2009) or social language intervention aged 5-10 (Adams et al 2012).

The salutary reminder here is that when populations of young offenders are examined, despite high levels of difficulties demonstrated, none or almost none are known to local speech and language therapy services or are flagged as having

communication difficulties (Bryan et al 2007). Lanz (2009) showed that 2% of a sample of young offenders in the community, in the UK, were known to SLT services. This suggests that the current young offender population in the UK, for whatever reason, have not reached speech and language therapy services. Also, the agencies involved with those young people have either not recognized their language difficulties or have not deemed these in need of intervention. The Youth Justice Board has attempted to address this by developing an assessment for young people accessing youth justice services (**Comprehensive Health Assessment Tool (CHAT) Lennox et al 2013**) to try to identify communication difficulties and other developmental or acquired disorders as part of routine assessment. This might be highlighted as an example of a more public health focused approach to language difficulties given that evidence presented above suggests that young offenders are likely to have language problems. However, the effectiveness of such initiatives can be jeopardized by inadequate training of the staff conducting the assessments, and by lack support for those staff (both during assessment and for any subsequent intervention) from professionals such as speech and language therapists and psychologists.

Beyond early recognition and intervention, **research studies increasingly focus on particular groups of children noticeably those with SLI and those with social communication difficulties where there are clear diagnostic criteria. There is less research attention on children with language difficulties that do not fit into such diagnostic groupings. An area of research that is under developed concerns children and young people who appear in non-clinical settings, eg schools, with a lower than ideal level of language in the absence of a known disorder such as SLI, or other**

developmental disorder that might affect their language level such as a learning difficulty.

Spencer et al (2012) demonstrated that children aged 13-14 years in an area of social disadvantage had significantly lower scores on language assessment than those in an area of socioeconomic advantage. Research rigour requires full appreciation of the factors that may contribute to such findings; for example, children and young people being unused to assessments, or the extrapolation for low score on a test to translate directly to functional difficulty may or may not be justified. However, we should not avoid the conclusion that social disadvantage may adversely affect language development. Indeed, there are numerous other sources of evidence for the vulnerability of language development where a child grows up in circumstances of economic disadvantage (Hart and Risley 2003, Reilly et al 2010, Sylvestre et al 2012, Roy et al 2014).

This does not mean that all children growing up in such circumstances will have language and communication difficulties, but we need to move from a position of requiring access to an SLT service and a definitive diagnosis to trigger intervention, to a position where difficulties are recognized as highly likely to occur in certain circumstances and where support is provided to help to support language development for the benefit of the whole population. Being in a nursery or school where there is a whole-systems approach to language development has been shown to benefit children with lower levels of language, but also those whose language is at a level expected for their age (Joffe 2006, Leyden et al 2011). Such interventions benefit children whose language difficulties are rendering them susceptible for other difficulties. However, many young people do not receive the support they need to develop oral language skills (Stringer and Lozano, 2007). There has been concern

about the lack of support for young people with communication difficulties including those justice services (Bercow, 2008).

Returning to the theme of compounding risk, as children enter adolescence, language plays a key role in creating and maintaining adolescent peer groups, and is used to demonstrate status, cohesion, trust, and entitlement to knowledge (Eckert 2005). We might therefore hypothesise that young people who are not in education are particularly vulnerable for this development not to occur or fully occur. Botting and Conti-Ramsden (2008) showed that language impairments had an adverse impact on functional social outcomes for adolescents with SLI. Snowling et al (2006) showed that children with unresolved speech and language difficulties were at risk for psychiatric morbidity. Children with difficulties in establishing positive peer relations are vulnerable to developing relationships with young people who are involved in anti-social or criminal activities, **and in developing mental health problems (Quinton et al 1993, Fujiki et al 1999)**. Thus, the risks associated with language difficulties may compound further in the adolescent period. Education is known to have a protective effect (Smart et al 2003), and perceived rejection **by** both family, community and peer groups is thought to underpin development of gang cultures, (Patten 1998). Patten also showed that all fifty of the gang members that he interviewed, were failing in secondary education and receiving no help, although some of the interviewees had enjoyed primary school. It is also interesting to note that within gang cultures simple language (including non-verbal hand signals) are used to signal difference and to enforce hierarchies (Hasan and Harry 1998).

It is important to remember that young people **accessing** youth justice services may previously have been in contact with health and social care services such as: parenting provision, child development services, school, services for young people

who are excluded from school, adolescent mental health services and substance abuse services. This raises a number of issues in relation to why language difficulties are not identified earlier and why support for SLCN does not continue across services (Bercow 2008). However, some vulnerable young people lead chaotic lives which may contribute to non-identification of SLCN through not accessing services, or not attending appointments. Also the social context of young people may mean that it is important not to show weakness or vulnerability, leading to development of strategies to mask difficulties with understanding or getting their point across. However, such strategies often involve reduced engagement and avoidance.

This suggests that young people in contact with **youth justice services could be identified sooner. Gregory and Bryan (2011) found that 75% of young people in a community youth offending service were found to have profiles indicative of SLCN. This suggests that it is possible to identify language difficulties in young people who offend before they re-offend and move into custodial provision.**

SLCN is over-represented in sections of the population more likely to be in custody, eg looked after children (McCool and Stevens 2011), and children at risk of exclusion from school (Clegg et al 2009). Also Young offender populations show over-representation of young people with a wide range of developmental problems (Loucks, 2007), and support to manage such difficulties is variable and inconsistent (Talbot, 2010). Again it should be possible to identify SLCN in vulnerable populations such as looked after children and children at risk of school exclusion much sooner and preferably before the child or young person becomes involved in criminal activity.

Once children and young people are involved with youth justice services, the demands on their language skills increase. Being interviewed by the police or giving evidence in court requires a person to tell their story, to get the facts in the correct order, and to explain and justify abstract concepts such as intention, motivation and decision-making (Lavigne and van Rybroek 2011).

Lavigne and van Rybroek (2014) examined the effects of language difficulties on the communication within the attorney-client relationship from a legal perspective. They summarised the key issues that would have a direct negative impact on that communication as:

- Poor vocabulary
- Difficulty processing complex sentences
- Difficulty following directions
- Deficient auditory memory
- Staying on topic
- Poor reading skills
- Deficient narrative skills (both expressive and receptive)
- Inability to grasp inferences
- Lack of background knowledge
- Difficulty learning new material
- Limited ability to seek clarification
- Limited ability to recognize and articulate emotional states
- Difficulty reading social cues
- Insensitivity to cause and effect
- Inability to recognize and control inappropriate behaviour
- Inability to interpret the motivations and thoughts of others

- Deficits in higher-order skills such as self-monitoring, planning, and appreciation of consequences.

Many of these difficulties would be found in the communication of young people with language difficulties. **Therefore young people with language difficulties face a further compounding risk that they will be unable to give their evidence or explain themselves adequately within justice processes that involve verbal communication.**

So could these children be identified earlier? We examined language skills in a population of young people in one of fifteen Secure Children's Homes in England and Wales which provide a locked environment and restrict a young person's liberty. **They provide care and accommodation for children and young people who have been detained or sentenced by the Youth Justice Board and those who have been remanded to secure local authority accommodation. They also accommodate and care for children and young people who have been placed there on welfare grounds local authorities or courts (Department of Education 2014a).** In all cases the young people are recognized as being vulnerable, with many having complex difficulties. Secure Children's Homes provide placements for children and young people between the ages of 10 and 17 and include full residential care, educational facilities and healthcare provision. A high level of intensive help is offered to each young person, with low resident to staff ratios. The secure children's homes work closely with multi-agency partners to deliver individualized care plans.

It could be argued that the vulnerability of these young people is recognised and therefore we might reasonably hypothesise that their language needs will be recognised and flagged. As far as the authors can ascertain, this is the first systematic study of language skills in a secure children's home sample. **The aim of the study presented below was to find out how many of the children being admitted**

to the secure Children's Home had language difficulties and whether these were recognised prior to admission.

Methodology

A sample of 118 young males entering a secure children's home **was** studied. (The Home did not admit females). The children were resident in the home when the SLT service commenced or were subsequently admitted over a 22 month period. The Community Healthcare NHS Trust gave permission for the study to be conducted using **de-identified** clinical data including information from the **ASSET assessment (YJB 2014) (the assessment of all aspects of need conducted on entry to Youth Justice Board services)**. The local NHS Ethical Review Committee confirmed that further permission was not required.

Each resident child and then each new entrant to the home was offered a routine speech and language therapy assessment. This consisted of the Comprehensive Evaluation of Language Fundamentals (**CELF-4**) sub-tests (Semel et al 2006) of: Word Classes Receptive (WCR), Understanding Spoken Paragraphs (USP), Formulated Sentences (FS) and Word Class Expressive (WCE), the British Picture Vocabulary Scale (BPVS) (Dunn et al 1997), and a **non-standardised** observational social skills assessment.

Statistical analysis was carried out using SPSS 21. Data are reported as counts and percentages. Relationships between measured speech and language difficulties and demographic/background factors were explored using the chi-squared test or Fisher's exact test as appropriate. Linear correlations and factor analysis were used to explore relationships between the BPVS and sub-scales of the **CELF-4**.

Results

Background

The participant's ages ranged from 11yrs 11mths to 17yrs 10mths with a mean of 15yrs 2mths. 90% (107 participants) were aged 14-16. Their background was explored by examining the files available showing that 37 (31.4%) were believed to have Looked after Child status on entry to the Centre. Once they enter the Home, all are then designated as "looked after". Fourteen (11.9%) were known to have a **statement of special educational need (which in the UK is a legal document that describes a child's special educational needs)**. However, it should be noted that some of the young people had missing data in relation to their background information. Full educational histories were not available to the research team.

Twenty-three participants (19.5%) had a confirmed diagnosis of mental illness recorded on the ASSET form, one of Waardenburg Syndrome (a genetic condition that can cause hearing loss and pigmentation changes) and one of 48 xxyy Syndrome (a chromosomal condition that causes medical and behavioural problems in males with some degree of difficulty with speech and language development, and learning disabilities, particularly reading problems, being very common). Only one had a documented hearing impairment.

Nearly half the participants (58) had a history of illegal drug use, while a further three had a history of alcohol abuse. Twenty-four (over 20%) had a high or very high vulnerability Score from ASSET, although for 72 participants (over 60%) no vulnerability score was available.

Sixty-seven per cent of participants had a level of challenging behaviour based on completion of an incident form documenting aggressive or property damage. For most of these, no more than three incidents were involved, but six individuals (5%) had more than twenty recorded incidents. It should be noted that the decision to report inappropriate behaviour is ultimately based on staff judgement, although the home had criteria to support decision making.

Only nine participants (7.6%) had transferred from other custodial establishments; they had come from several different establishments and transferred for no consistent reason. (Again this may reflect them being involved in an incident with others, but equally they could be moved due to their increasing vulnerability).

Offences and Sentencing

Table 1 below shows the offences individuals in the sample had committed or were accused of. It should be noted that some residents were remanded for more than one offence. Among the offences, violent crimes were common (43.2%), along with sexual offences (13.6%) and crimes against property (28%). Eight (6.8%) participants were secured under Section 25 Secure Welfare orders, which means that they were detained for their own protection and had not necessarily committed any crime.

Over half of the participants (65) were subject to Detention & Training Orders (detention plus education) while over a quarter (31) were in Custody on Remand, awaiting a court judgement on the offence they were accused of. Amongst the 74 with a fixed length sentence (excluding those on remand or subject to a secure welfare order) over one third (26) had a sentence of no longer than 6 months. Sentence lengths ranged from 1 month to 7 years with a median of 8 months.

Offence	Frequency	Percent
Violent crimes (other than sexual)	51	43.2
Offences against property	33	28.0
Sexual offences	16	13.6
Breach of Bail/Order/PCJ	14	11.9
Section 25 Secure Welfare	8	6.8
Possession of Class A drugs	2	1.7
Dangerous Driving	1	0.8
Hoax Calls	1	0.8

Table 1: offences committed or alleged.

Speech & Language Assessments

Only 2 participants had speech and language concerns recorded prior to entry to the Home. 11 refused all formal speech and language assessments on entry, whilst a further 19 refused some of the assessments.

For the **CELF-4**, 50 (42.4%), 47 (39.8%), 13 (11.0%) and 25 (21.2%) recorded a score of 1.5 or more standard deviations below the mean on the word classes receptive, understanding spoken paragraphs, formulated sentences and word classes expressive tests respectively. See table 2.

	CELFWCR		CELFUSP		CELF FS		CELF WCE		BPVS	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1.5 or more SD below mean	50	42.4	47	39.8	13	11.0	25	21.2	42	35.6
Less than 1.5 SD below mean	41	34.7	51	43.2	76	64.4	66	55.9	38	32.2
Total	91	77.1	98	83.1	89	75.4	91	77.1	80	67.8
Missing	27	22.9	20	16.9	29	24.6	27	22.9	38	32.2
Total	118	100.0	118	100.0	118	100.0	118	100.0	118	100.0

Table 2: **CELF-4** and BPVS scores.

A similar picture is seen with the BPVS, with 42 (35.6% of all the participants) recording a score of 1.5 or more standard deviations below the mean. Given that we might anticipate about 2.5% of the UK population having speech and language difficulties at this age, the data suggests that levels of SLCN are significantly higher within this sample.

Speech & Language Intervention

Eighty-four (72%) of the sample had speech and language targets set for them, often more than one. These were mostly in the areas of processing & memory (59.3%) and increasing receptive & expressive vocabulary (61%). 7 participants received intensive therapeutic intervention, 24 participants were designated as requiring one to one SLT, 3 were given a programme of support administered by a teaching and learning assistant, and 58 were given language support to access the curriculum during education (see table 3). The decision to treat an individual directly or to support him indirectly was made by the SLT as part of standard practice based on her analysis of the screening results, further assessment where necessary and the multi-disciplinary team discussion and decision making around each individual.

Support provided	Frequency	Percent
None identified	33	28.0
1:1 Speech & Language Therapy*	17	14.4
1:1 Teaching & Learning Assistant Support	3	2.5
Support Across Curriculum	58	49.2
Intensive Support	7	5.9
Total	118	100.0

Table 3 SLT Input for the participants

* 1 refused and 1 left before receiving therapy

93 (78.8%) engaged with education while at the Home and their level of engagement was assessed and graded by education staff based on staff judgement. 62

participants were noted to need to improve their level of engagement. (See table 4).

Engagement	Frequency	Percent
Outstanding	7	5.9
Outstanding/Good	1	.8
Good	18	15.3
Good/Mixed	5	4.2
Mixed (needs improvement)	39	33.1
Mixed/Inadequate	5	4.2
Inadequate	18	15.3
Total	93	78.8
Missing data	25	21.2
Total	118	100.0

Table 4: Engagement with education

Exploring Relationships between speech and language difficulties and other factors

Taking a scaled score of 1.5 SD or more below the mean on the BPVS, or any of the subscales of **CELF-4**, as an indicator of speech and language difficulties, relationships with other factors were explored.

There appeared to be no significant relationship between SLCN and any diagnosis of mental health problems. Low scores on the **CELF-4** word classes expressive

($p=0.015$) and understanding spoken paragraphs ($p=0.05$) tended to be associated with *less* challenging behaviour (recorded incidents ≤ 10) but this was less apparent with the **CELF-4** word classes receptive and not apparent at all with the formulated sentences test or the BPVS. (See table 5).

			Challenging Behaviour			p-value*
			Less challenging (ROSE \leq 10)	More challenging (ROSE $>$ 10)	Total	
BPVS	Less than 1.5 SD below mean	n	31	3	34	0.722
		%	91.2%	8.8%	100.0%	
	1.5 or more SD below mean	n	36	5	41	
		%	87.8%	12.2%	100.0%	
	Total	n	67	8	75	
		%	89.3%	10.7%	100.0%	
CELF WCR	Less than 1.5 SD below mean	n	39	1	40	0.121
		%	97.5%	2.5%	100.0%	
	1.5 or more SD below mean	n	42	6	48	
		%	87.5%	12.5%	100.0%	
	Total	n	81	7	88	
		%	92.0%	8.0%	100.0%	
CELF USP	Less than 1.5 SD below mean	n	48	1	49	0.050
		%	98.0%	2.0%	100.0%	
	1.5 or more SD below mean	n	38	6	44	
		%	86.4%	13.6%	100.0%	
	Total	n	86	7	93	
		%	92.5%	7.5%	100.0%	
CELF FS	Less than 1.5 SD below mean	n	68	5	73	0.285
		%	93.2%	6.8%	100.0%	
	1.5 or more SD below mean	n	11	2	13	
		%	84.6%	15.4%	100.0%	
	Total	n	79	7	86	
		%	91.9%	8.1%	100.0%	
CELF WCR	Less than 1.5 SD below mean	n	62	2	64	0.015
		%	96.9%	3.1%	100.0%	
	1.5 or more SD below mean	n	19	5	24	
		%	79.2%	20.8%	100.0%	
	Total	n	81	7	88	
		%	92.0%	8.0%	100.0%	

Table 5: SLCD and challenging behaviour

* Fisher's exact test

Low scores on the BPVS/**CELF-4** were not significantly associated with previous looked after child status, having an educational statement, education status, or any particular category of offence.

Those detained under a Section 25 secure welfare order were significantly less likely to have SLCN measured by the **CELF-4** word classes receptive ($p= 0.016$); for other assessments this affect was also apparent, but not significant. However, only five boys in this category completed the assessments.

Patterns of support provided at the home clearly differed for those with and without SLCN; statistical testing is not relevant here since support has been targeted partly on the basis of speech and language assessments.

Links between Assessments

With 30 participants from the sample refusing some or all speech and language assessments, it would be valuable to reduce the assessment burden while still identifying participants experiencing difficulties.

Correlation analysis using the BPVS and the four **CELF-4** subtests (it was not possible to use the aggregate language score from the **CELF-4** because not all required sub-tests were used) shows that four of the five assessments tend to produce highly correlated scaled scores ie of 0.65 and above: in this group of participants only the **CELF-4** understanding spoken paragraphs scaled score is more moderately correlated with the other scales. (see Table 6).

Pearson Correlation (N)	Scaled Scores			
	BPVS	CELF WCR	CELF USP	CELF FS
BPVS				
CELF WCR	0.71 (66)			
CELF USP	0.35 (72)	0.51 (90)		
CELF FS	0.65 (65)	0.75 (88)	0.47 (88)	
CELF WCE	0.69 (66)	0.91 (91)	0.47 (90)	0.78 (88)

Table 6: Correlations between the assessments

Factor analysis was used to identify if different subscales tended to measure the same difficulty or different ones and if so whether use of just 1 or 2 subscales could reasonably capture the majority of those with speech & language difficulties. The one factor identified brings together basic aspects of Receptive & Expressive language at the word and sentence level. The **CELF-4** USP appears to measure a rather different aspect, which is that of auditory memory, comprehension and inference.

Factor analysis identifies just one factor with eigenvalue greater than 1 which explains 70% of the variance in scores; the factors loadings are greatest on the BPVS, and **CELF-4** word classes receptive, formulated sentences and word classes expressive sub-tests; the loading for the **CELF-4** understanding spoken paragraphs score is much lower (See table 7).

	Factor
	1
BPVS Standardised Score	0.831
CELF WCR scaled score	0.938
CELF USP scaled score	0.551
CELF FS scaled score	0.881
CELF WCE scaled score	0.930

Table 7: Factor loadings for identified factor

This tends to suggest that it might be possible to use one or two of the assessments in cases where lack of cooperation with assessment is an issue. The **CELF-4** word classes expressive and **CELF-4** word classes receptive have the highest weightings in the single factor identified, so their ability to identify individuals who scored more than 1.5 SD below the mean in any speech and language assessment has been

explored to identify a pragmatic approach to assessment. In this sample, 67 (57%) individuals scored more than 1.5SD below the mean on at least one of the five speech and language assessments. Of these 50 (75%) could have been identified by using the CELF-4 word classes receptive alone. A further 9 (13%) could have been identified using the CELF-4 understanding spoken paragraphs in addition, leaving only 8 (12%) whose speech and language difficulties were confined to the three other assessment areas. This suggests that these two assessments could be used to provide a generic assessment in cases where further assessment is difficult, although completion of all the tests is highly desirable if at all possible.

Discussion

This paper provides information on language difficulties for a sample of children who are detained in a secure children's home. They are also recognised as vulnerable and some have committed serious crimes, although some were on remand and given the premise of innocent until proven guilty, it must be acknowledged that those on remand could be found not to have committed a crime. Also eight of the participants were detained on a welfare order and may not have committed a crime. When discussing the prevalence of language disorders in children and young people who offend, it is important to acknowledge that a sample such as the one presented here includes participants who may not have offended.

The majority came into the secure children's home from the community with only 8% transferring from another custodial setting. We see a similar pattern of relatively high levels of language difficulty in this younger sample with around 30% being 1.5 SD's below the mean on the tests used. Although these young people were deemed vulnerable, hence their admission to a secure children's home, only two had

previously documented speech and language needs. This suggests that even where children are recognised as vulnerable, their speech, language and communication difficulties are not being recognised.

This was a convenience sample with background data being that available to a clinical service. Methodological weaknesses of the findings are that there was no control group, some data was missing and there was no available data on socio-economic status or educational history. It is common in criminal justice settings for clinicians to lack this type of background data that is more likely to be available in more traditional healthcare settings. **Future research could address the control issue by matching such participants with age and education level control participants.** The study used standardised tests so it could be argued that a control group is not required. However, if the participants were matched with age and education level non-offending control participants from similar socio-economic status backgrounds, this might help to establish the factors that contribute to offending. However, more detailed background information would be required to achieve this matching. **Non-standardised rating tools were used to assess participant engagement in education and social skills so the risk of observer bias influencing ratings must be acknowledged, and use of standardised assessment tools would be recommended for future studies.** Aside from these issues, the data does suggest that further research into the speech, language and communication skills of children held within the secure children's home estate would be justified.

It should be noted that the speech and language therapist provided support for a higher number of individuals (72%) in terms of setting targets for them to achieve. This suggests that although some were above the cut off level set for research purposes, in terms of a multi-agency approach to intervention, it was deemed

necessary to support language to facilitate other interventions such as education or mental health interventions.

These results suggest that when children come into custodial settings at a young age with pre-existing SLCN, this is not recognised in the vast majority of cases despite their vulnerability being recognised. The level of SLCN is lower than that demonstrated in older young offender samples. This may be due to some of these younger vulnerable young people being diverted away from young offender establishments or to the higher level of support provided allowing the children and young people to address their difficulties, but this is speculative. Longitudinal studies are needed to examine the language and wider outcomes for such children. There is evidence to suggest that where children with language impairments are supported through secondary schooling, their education outcomes are improved (Durkin et al (2009). Therefore it is important to identify language difficulties as early as possible to ensure that the child or young person receives support with language so that they can gain the best possible outcomes from education. There is then an added gain of engagement in education which is a protective factor against involvement in criminal activities (Smart et al 2003).

The economic case for speech and language therapy in terms of preventing later care costs has been made (Marsh et al 2010). In addition, the cost of speech and language therapy is small compared to the costs of youth justice services, although more research is needed on the economic impact of speech and language therapy outcomes for young people in the youth justice system. In 2013, 1,780 under 18s and 6,272 young people aged 18-20 were in custody (Ministry of Justice 2013) at a cost of £60,000-£209,000 per person per year depending on the type of placement (Bromley Briefings 2014). In addition around 19,000 new entrants to youth justice

services were managed by Youth offending teams in the community in 2013, although this includes preventative referrals (YJB 2013). In 2013, re-offending rates for young people had reduced from a peak in 2006, but still stood at 58% of young people (18-20 years) and 72% for children aged 10-17 (Ministry of Justice 2013a). It would therefore seem timely for service commissioners to address the young person's ability to understand and communicate in order to help them to benefit more from both education and measures to prevent re-offending. Children entering secure accommodation within youth justice services should have routine assessment of their oral language skills. SLT services in the youth justice system are developing, but further service development will be required to give access to all young people involved. Snow et al (2015) also advocate for further development of the evidence base for language intervention in youth justice services.

Law et al (2013) advocate a public health approach rather than a clinical approach to child language and this may be very helpful in determining a whole population approach to language development. An example, would be language development and enrichment programmes in schools and nurseries. These should be required in areas where a significant number of children are from areas of socioeconomic disadvantage. Furthermore, the literature reviewed earlier may suggest that in certain circumstances, **children should be considered as likely to have communication difficulty, and should therefore have their language skills assessed routinely in nursery and school.**

Teachers and staff working across services for children in the wider community and in youth justice services need training to understand the effects of communication difficulties and how to identify them. Health and educational services should include SLT services or access to them so that staff are supported to identify and manage

children with lower than expected levels of language. Where children are falling behind in educational attainment, assessment of oral language skills should be routinely undertaken to ensure that any underlying language difficulties can be recognised and supported.

What is required is that speech and language difficulties are identified early, but also that development during childhood or adolescence of literacy difficulties, peer interaction problems, teacher (or other authority figure) interaction difficulties, behaviour problems, or emotional problems should trigger full assessment of oral language skills.

We hypothesised that as the children entering a secure children's home are recognised as vulnerable, any language difficulties would be recognised. This was not the case, despite around 30% of the participants being at least 1.5SD below the expected mean for their age on language assessments. Given that we have evidence of over-representation of children who are excluded from school, in care and presenting with mental health or behavioural issues in the criminal justice system, It would also seem important to focus speech and language therapy provision on settings where the young people who are most vulnerable to involvement in criminal activity may be found, such as schemes for children at risk of school exclusion, and within services for children with behavioural problems and services for children presenting with mental health or addiction problems.

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