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Consistency between Provision, Outcomes and Functioning Needs in Statutory Documents for Young Children with Developmental Disabilities in England

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Abstract:	Background: It is widely accepted that early childhood intervention for children with disabilities should address the assessment-intervention cycle holistically. Documenting both assessment and intervention is important to support provision effectively. In England, the official document that describes needs and provision for children with special educational needs and disabilities is the Education Health and Care plan. This document requires inter-professional collaboration and a focus on children's holistic participation, rather than diagnosis. Aim: To examine the consistency between provision, outcomes and needs of young children with disabilities in England, as described in their Education Health and Care plans. Methods: The plans of 68 young children were examined and the relationships between documented needs, outcomes and provision actions analysed. Results: provision is more related to children's individual needs, than to their diagnoses, when needs are described in sufficient detail; interdisciplinarity leads to higher quality documentation of provision and outcomes. However, more needs to be done to support professionals in developing higher quality needs descriptions and interdisciplinary collaborations. Implications: Training and interdisciplinarity with a common language between professionals have the potential to improve currently observed challenges regarding consistency between provision, needs and outcomes.
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Table 1. Sample distribution per diagnosis, age, IDACI and type of setting attended

Diagnosis	Age		IDACI			Type of setting	
	4≤6	>6-8	Most affluent	Mid-range	Most deprived	Mainstream	Special
ASD	13	18	25	2	4	23	8
SLC	2	6	5	2	1	7	1
Other	9	20	18	7	4	24	5
Total	24	44	48	11	9	54	14

Table 2. Average frequency for each type of need found in the EHC plans analysed and using the ICF taxonomy (N=68)

Needs	**Minimum**	**Maximum**	**Mean**	**Standard Deviation**
Learning and Applying Knowledge	0	9	3.28	2.14
Mental Functions	0	9	3.07	1.81
Self-care	0	9	2.9412	1.80284
Interpersonal Interactions	0	7	2.63	1.77
Domestic Life	0	8	1.79	1.87
Mobility	0	5	1.57	1.14
General Tasks and demands	0	9	1.32	1.59
Musculoskeletal Functions	0	7	.66	1.22

Table 3. Distribution of the most frequent provision actions/strategies per diagnostic group, type of school and region (used in more than 50% of plans in at least one category)

Ranked provision actions	**Frequency of plans that include this action in %**	**Frequency per Diagnosis in %**			**Frequency per type of school in %**		**Frequency per IDACI position in %**		
		ASD n=31	SLC n=8	OTHER n=29	Mainstream n=54	Special n=14	Top 25% (most deprived) n=48	Mid 25% n=11	Bottom 25% (most affluent) n=9
Sensory Strategies	***88.2 (60)***	***93.5 (29)***	***75 (6)***	***86.2 (25)***	***96.2 (52)***	***57.1 (8)***	***83.3 (40)***	***100 (11)***	***100 (9)***
Structured Routine	***69.1 (47)***	***61.3 (19)***	***87.5 (7)***	***72.4 (21)***	***64.8 (35)***	***78.6 (11)***	***60.4 (29)***	***90.9 (10)***	***88.9 (8)***
Speech and Language Therapy embedded in the classroom	***66.2 (45)***	***61.2 (19)***	***87 (7)***	***65.5 (19)***	***64.8 (35)***	***71.4 (10)***	***68.8 (33)***	***63.6 (7)***	***55.6 (5)***
Modelling	***60.3 (41)***	***70.9 (22)***	***62.5 (5)***	48.2 (14)	***57.4 (31)***	***71.4 (10)***	***64.6 (31)***	***54.5 (6)***	44.4 (4)
Various social skills strategies	***55.9 (38)***	41.9 (13)	***75 (6)***	***65.5 (19)***	***64.8 (35)***	21.4 (3)	***56.3 (27)***	***54.5 (6)***	***55.6 (5)***
Environmental Modification	***54.4 (37)***	35.5 (11)	***62.5 (5)***	***72.4 (21)***	***53.7 (29)***	***57.1 (8)***	45.8 (22)	***90.9 (10)***	***55.6 (5)***
Differentiated curriculum/activities	***50 (34)***	48.4 (15)	***50 (4)***	***51.7 (15)***	***50 (27)***	***50 (7)***	47.9 (23)	***54.5 (6)***	***55.6 (5)***
Occupational Therapy embedded in classroom	39.7 (27)	25.8 (8)	37.5 (3)	***55.2 (16)***	42.5 (23)	28.6 (4)	31.3 (15)	***54.5 (6)***	***66.7 (6)***
Visual cues	39.7 (27)	***54.8 (17)***	***50 (4)***	20.7 (6)	46.3 (25)	14.3 (2)	47.9 (23)	27.3 (3)	11.1 (1)
Picture Exchange Communication System (PECS)	35.3 (24)	45.1 (14)	25 (2)	27.5 (8)	27.7 (15)	***64.3 (9)***	43.8 (21)	18.2 (2)	11.1 (1)
Paired or small group work	35.3 (24)	41.9 (13)	***62.5 (5)***	20.7 (6)	40.7 (22)	14.3 (2)	41.7 (20)	27.3 (3)	11.1 (1)
Repetition	33.8 (23)	32.3 (10)	***50 (4)***	31 (9)	35.2 (19)	28.6 (4)	37.5 (18)	36.4 (4)	11.1 (1)
One-to-one Speech and Language Therapy	32.4 (22)	25.8 (8)	***62.5 (5)***	31 (9)	33.3 (18)	28.6 (4)	31.3 (15)	***63.6 (7)***	0
Makaton	14.7 (10)	3.2 (1)	***50 (4)***	17.2 (5)	16.7 (9)	7.14 (1)	12.5 (6)	0	44.4 (4)

Table 4. Parameter estimates for the likelihood of adopting each provision action according to diagnosis, type of setting, frequency of needs and quality of outcomes, where there is a significance level p<.05.

					95% CI		
Predictors: Diagnosis, type of placement, region, outcome quality and needs documented	**B**	**SE**	**Wald**	**Sig**	**Lower**	**Exp (B)**	**Upper**
						Picture Exchange Communication System (PECS)	
Attending a mainstream setting.	1.57	.69	5.21	.022	1.25	4.78	18.33
Presenting interpersonal interaction needs.	-.597	.230	6.757	.009	.351	.550	.863
						Sensory strategies	
Attending a mainstream setting.	-3.59	1.35	7.11	.008	.002	.027	.386
						Other visual cues	
Attending a mainstream setting.	-2.07	.88	5.46	.019	.022	.126	.716
Having a diagnosis of ASD	-1.543	.935	2.724	.099	.034	.214	1.336
Having a diagnosis of SLC	-1.726	.673	6.577	.010	.048	.178	.666
Presenting needs relating to learning and applying knowledge.	.531	.230	5.326	.021	1.083	1.701	2.670
Presenting needs related to mental functions.	.603	.336	3.218	.073	.946	1.827	3.529
Presenting needs related to self-care.	.823	.329	6.270	.012	1.196	2.277	4.338
Presenting needs related to domestic life.	.853	.322	7.006	.008	1.248	2.346	4.410
						Differentiated curriculum	
Presenting needs related to musculoskeletal functions.	-.900	.375	5.744	.017	.195	.407	.849
						Environmental modifications	
Having a diagnosis other than ASD and SLC.	.325	.929	.122	.023	1.203	3.916	12.743
						Paired/small group work	
Presenting needs relating to mental functions.	.932	.348	7.160	.007	1.283	2.539	5.024
Presenting needs relating to self-care.	.980	.334	8.584	.003	1.383	2.663	5.129
Presenting needs relating to domestic life.	.805	.319	6.367	.012	1.197	2.236	4.177

							Structured routine
Presenting needs relating to mental functions.	-.755	.305	6.124	.013	.258	.470	.855
Presenting needs relating to self-care.	-.612	.294	4.321	.038	.305	.542	.966
							Occupational Therapy embedded in the classroom
Presenting higher quality outcomes.	-.3.641	1.758	4.289	.038	.001	.026	.822
Having a diagnosis of SLC.	1.252	.613	4.165	.041	1.051	3.496	11.633
Presenting needs relating to mobility.	-.734	.317	5.355	.021	.258	.480	.894
Presenting needs relating to domestic life.	-.639	.208	9.466	.002	.528	.352	.793
							Other social skills interventions
Attending a mainstream setting.	-2.010	.768	6.854	.009	.030	.134	.603

RUNNING HEAD: Provision, needs and outcomes in England

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Abstract

Background: It is widely accepted that early childhood intervention for children with disabilities should address the assessment-intervention cycle holistically. Documenting both assessment and intervention is important to support provision effectively. In England, the official document that describes needs and provision for children with special educational needs and disabilities is the Education Health and Care plan. This document requires inter-professional collaboration and a focus on children's holistic participation, rather than diagnosis. Aim: To examine the consistency between provision, outcomes and needs of young children with disabilities in England, as described in their Education Health and Care plans. Methods: The plans of 68 young children were examined and the relationships between documented needs, outcomes and provision actions analysed. Results: provision is more related to children's individual needs, than to their diagnoses, when needs are described in sufficient detail; interdisciplinarity leads to higher quality documentation of provision and outcomes. However, more needs to be done to support professionals in developing higher quality needs descriptions and interdisciplinary collaborations. Implications: Training and interdisciplinarity with a common language between professionals have the potential to improve currently observed challenges regarding consistency between provision, needs and outcomes.

Keywords: EHC plans, England, SEND, disability, special educational needs, statutory

What this paper adds?

This paper is the first to provide evidence on the quality of the documented provision in the Education Health and Care Plans of young children in England. Moreover, it does so by examining the relationship between documented provision and documented outcomes and needs. Research on the effectiveness of the new policy for education and care of children with disabilities in England has highlighted various concerns regarding its implementation. This paper adds some new concerns to that body of evidence (for example, that not all provision relates to documented needs of the children) but also adds some positive directions for future successful implementation: for example, when needs are well described (in an individualised and holistic way) they often generate higher quality documented provision; when multi-agency work is in place and various professionals are deployed as part of provision, higher quality outcomes are achieved. This study is the first to effectively demonstrate these trends, informing professional practice and policy change.

Introduction

It is widely accepted that early intervention for young children with developmental disabilities should address the assessment-intervention cycle holistically and authentically; in other words, it should address all areas of the child's life as a whole, within natural life contexts (Neisworth & Bagnato, 2004; Bagnato, 2005; Meisels & Shonkoff, 1990). This implies that assessment should be embedded in daily life routines, informing provision actions, and that these will inform embedded assessment, in a cyclic, transactional process within the natural everyday life environment (Sameroff & Fiese, 2000). Several forms of naturalistic approaches to early childhood intervention highlight this need for informed, well planned interventions which are embedded within children's everyday life settings whenever possible (Snyder et al., 2015), regardless of diagnoses (Pinto et al., 2018), and addressing

functional needs as much as possible (Rakap & Parlak-Rakap, 2011). The documentation of this process in statutory documents for children with developmental disabilities is important, not only because these are the official documents that circulate amongst services providing for the child's needs, but also because statutory documents can support professionals in delivering effective interventions on an everyday basis, if they are well designed and workable (Wilczynski, Menousek, Hunter & Mudgal, 2007).

Many countries with an established special educational needs and disabilities provision service have Individualised Education Plans (IEPs) as statutory documents (Meijer, 2003). Statutory documents are understood as the official document that describes the individualised needs of the child with disabilities and respective provision that will be put in place to support her/him. In England, some children who require some additional level of support have IEPs, where that support is outlined. However, the English statutory documents for children with special educational needs and disabilities are the Education Health and Care plans (EHC). IEPs are used to support special provision for children who might need additional support but are not classified as having special educational needs and disabilities requiring statutory provision. Children are considered to have Special Educational Needs and Disabilities when they have a learning difficulty or disability which calls for special educational provision to be made for them (Department for Education & Department of Health, 2015).

The EHC plans were introduced in England in 2014 and since then have been the subject of controversy. When the Children and Families Act 2014 and its respective Special Educational Needs and Disabilities (SEND) Code of Practice were introduced, the EHC plans replaced the Statements of Special Educational Needs and Disabilities. The main difference between the new and the old statutory documents, is that the EHC plan is supposed to emphasise holistic *participation*, which *must* result from the coordinated efforts of the Education sector,

the Health sector and the Social Care sector (Department for Education & Department of Health, 2015). The previous Statements of Special Educational Needs were more based on the assumption of an existing diagnosable condition and less focused on *participation* in everyday life. Therefore, it has been argued that the policy shift in England reflects a paradigm change towards a functional model of disability, beyond the medical and social models (Castro & Palikara, 2016). This model, based on series of studies that started to be published in the late 1990s, emphasises that the best form of intervention is one that targets individualised profiles of functioning, based on how each child behaves and participates in his/her natural daily environments, with the specific barriers and facilitators that characterise them (Simeonsson, 2006). The principles of holistic intervention and cross-disciplinary work introduced by the Children and Families Act 2014 are very well aligned with international recommended guidelines for assessment and intervention with young children with disabilities. These guidelines follow the principles of a functional model: for example, the World Health Organisation (WHO), as the proponent of the International Classification of Functioning, Disability and Health (ICF), and its Children and Youth version (ICF-CY; WHO, 2001, 2007) defends that any approach to working with children with disabilities must be based on the assumption that development is a complex whole, where body functions and structures, activities and forms of participation dynamically interact with each other all the time and with the environment. From this point of view, the documentation of children's needs should reflect this biopsychosocial nature of development in the assessment-intervention process, which constitutes the essence of the changes introduced by the Children and Families Act 2014 in England. The structure suggested for EHC plans suggested in the Code of Practice 2015 reflects this paradigm, by providing a section on children's views and aspirations (Section A), sections on Education, Health and Social Care needs (respectively

sections B, C and D), a section on outcomes to be achieved (section E) and sections on provision for Education, Health and Social Care (respectively sections F,G and H).

However, various research studies have highlighted concerns with how this process has been implemented, both in relation to professionals' preparedness to implement a truly holistic documentation of needs, outcomes and provision (Castro, Grande & Palikara, 2019; Palikara, Castro, Gaona & Eirinaki, 2019), and also in relation to the quality and relevance of the resulting EHC plans to support professionals and help children (Palikara, Castro, Gaona & Eirinaki, 2018; Boesley & Crane, 2018). For example, research in this area has found that most children's needs are reported in the EHC plans with similar frequencies across diagnostic groups, and that the most deprived Local Authorities report fewer of the most frequent needs (which are mental health and sensory needs) (Castro, Palikara & Grande, 2019). Additionally, it has also been found that schools differ in the reporting of some of the most frequent needs, with special settings providing more detail than mainstream settings. Lastly, it has also been shown that the majority of plans have low quality outcomes, and that higher quality outcomes are found in the most affluent local authorities and in special settings, when comparing to mainstream settings (Castro, Grande & Palikara, 2019). However, no research to date has provided evidence on the usefulness of the provision actions included in the EHC plans for children with developmental disabilities in England, and whether these follow the same inequality pattern and quality concerns that other sections of the plans seem to present.

This paper aims to provide unique evidence to complement this body of research on the quality of the English EHC plans, by focusing on the statutory provision designed for children in their EHC plans, and whether those provision actions can be regarded as a good match to the documented needs of the children. Specifically, this study aims to: 1) characterise the main provision actions planned for young children with developmental

disabilities and included in their EHC plans; 2) characterise differences between diagnoses, types of school, and regions in relation to provision; and 3) to characterise the relationship between functioning needs, outcome quality and provision actions.

The focus will be on young children with EHC plans, given the well documented need for effective early intervention as the best way to support long-term successful provision for children with developmental disabilities; The long-term benefits of intervening successfully at a young age are well known, both in terms of economic benefits for individual nations (e.g. Greenwood, 2018; Nores & Barnett, 2010), but also in terms of individual positive outcomes for children (e.g. Bakken, Brown & Downing, 2017; Heckman, Pinto & Savelyev, 2013; Campbell et al., 2012). Therefore, it seems essential that statutory documents for young children with an established disability are as accurate and workable as possible, particularly by establishing effective provision actions that match individual functioning needs.

Methodology

This study is based on document analysis of young children's EHC plans gathered, involving both qualitative and quantitative approaches to data analysis. The EHC plans analysed here constitute a sub-sample withdrawn from a larger dataset looking at EHC plan quality. The larger data set was comprised of more than 200 plans for children and young people up to 25 years of age. This study if focused on quality concerns surrounding plans for young children, and therefore, plans belonging to children aged 4 to 8 were withdrawn from the larger dataset. Previous studies within this project looked at the quality of the outcomes developed for children with SEND in their statutory documents (Castro, Grande & Palikara, 2019), the quality of the descriptions of children's needs (Castro-Kemp, Palikara & Grande, 2019), and of the descriptions of children's own perspectives (Palikara, Castro, Gaona & Eirinaki, 2018). This study will focus on the provision section of young children's EHC plans, and on the

goodness-of-fit between this and other sections. Both qualitative and quantitative approaches have been adopted: the EHC plans were initially analysed following qualitative thematic analysis principles, followed by quantification of the categories found for the purpose on inferential statistical analyses.

Participants and Recruitment

The EHC plans included in this study and extracted from a previous larger dataset were selected from that dataset based on the following criteria: 1) EHC plans belonging to young children up to the age of 8 years old (since the focus of this study is on the importance of consistent early assessment and provision), and 2) EHC plans with a complete needs section, a complete outcomes section and a complete provision section. This process resulted in 68 young children's plans (52 boys ad 15 girls) being gathered and analysed from seven local authorities in Greater London, which were classified into three main categories based on the Income Deprivation Affecting Children's Index (IDACI; Smith et al., 2015): the top 25% IDACI (which are the most deprived ones in the country), the bottom 25% IDACI (which are some of the most affluent in the country) and the middle range IDACI.

Thirty-one children were identified in the EHC plans has having Autism Spectrum Disorders (ASD), eight children were identified has having Speech Language and Communication difficulties (SLC) and 29 children had other conditions such as genetic syndromes, physical disabilities, multisensory impairments and hearing impairments. Fifty-four children attend mainstream education settings and 14 attended special education settings. One child was 4 years old at the time of analysis, one child was 5 years old, 22 children were 6 years old, 27 were 7 years old and 17 were 8 years of age. Most children (n=48) came from deprived local authorities, at the top 25% of the IDACI national distribution. Nine children came from the

most affluent local authorities, at the bottom 25% of the IDACI national distribution; the remaining 11 children came from the mid-quarters of the national IDACI distribution. Table 1 presents the sample distribution per diagnosis, age, IDACI and type of setting attended.

Table 1

To recruit participants and obtain permission to access their EHC plans, letters were sent to Greater London local authorities in close proximity to the area where the research team is based. This area was later expanded, due to the low numbers of EHC plans completed by local authorities in the period of this study. The agreement of the SEND representative for each local authority was obtained first, after which, meetings with individual schools were arranged to explain the purpose of the study and clarify confidentiality and anonymity issues. Schools that have agreed to participate in the study liaised with parents/guardians by sending our standard information sheets and consent forms. Opt-in consent forms were sent by the parents/guardians directly to the research team. Following consent, the EHC plans were released in hard copy or digital copy, as per the family and school's preference. All digital copies were kept in password protected files and hard copies in locked filing cabinets, accessible by the core research team only. Ethical approval to undertake this study was obtained by Ethics Committee of the hosting research institution. The research team followed the British Psychological Society Code of Human Research Ethics as well as the British Educational Research Association Ethical Guidelines for Educational Research. We have also ensured that in writing this report we followed the principles of Statistical Disclosure Control, to ensure that participants will be identified through the documentation of cross-tabulation of personal data (e.g. gender, local authority, etc.), albeit anonymised.

Instruments and Materials

The International Classification of Functioning Disability and Health (ICF; WHO, 2001) was used as the taxonomy of choice to perform deductive content analysis of the content of the EHC plans. The ICF is considered the gold standard classification system for describing and documenting functioning and disability, independent from diagnosis and following an individualised, detailed approach, whilst also constituting a common language amongst disciplines (Lollar & Simeonsson, 2005). These characteristics make this system and framework the ideal choice for the purpose of this study, which is to analyse content relating to functioning and disability within the plans. Several other studies have used the ICF for the same purpose (Castro & Grande, 2018; Castro, Grande & Palikara, 2019; Rakap, 2015) and for similar purposes such as performing thematic analysis of functioning and disability in interview transcripts (e.g. Gaona, Castro & Paliara, 2019; Zakirova-Engstrand & Granlund, 2009), or in assessment instruments (e.g.Castro & Grande, 2018; Schiariti et al., 2014). The ICF contains three main components: one covering a detailed classification of *body functions and structures*, a second component containing a taxonomy of *activities* and form of *participation* that children (and adults) may perform, and one third component describing *environmental factors* that may facilitate or restrict that form of participation. This biopsychosocial approach to describing functioning and disability is very well aligned with the framework proposed by the English Children and Families Act 2014, which clearly underlines the necessary holistic nature of assessment and intervention for special educational needs and disabilities provision (Castro & Palikara, 2016; Norwich & Eaton, 2015).

The quality of the outcomes included in the EHC plans, was evaluated using the Goal Functionality Scale III (GFS III), as its criteria have been considered closely aligned to the principles for developing good quality outcomes on the English SEND Code of Practice, namely the importance of ensuring that they are specific, measurable, attainable, relevant and time-framed (SMART) (McWilliam, 2009). The GFS III includes the following items: (a)

indication of the routine in which the child will participate [criterion 1], (b) specification of the desired behaviour [criterion 2], (c) relevance of the specified behaviour for the child's overall participation [criterion 3], (d) quantification of the acquisition criterion [criterion 4], (e) relevance of the acquisition criterion (included in a daily routine) [criterion 5], (f) presence of a generalization criterion [criterion 6], and (g) presence of a timeframe criterion [criterion 7]. These items are rated in a 4-point scale (*not at all, somewhat, much* and *very much*). The GFS II has been used in other studies with high levels of reliability, for the purpose of measuring the quality of outcomes for children (Castro, Grande & Palikara, 2019; Rakap, 2015).

Data analysis

Sections B, C and D of all EHC plans gathered, respectively referring to Education needs, Health needs and Social Care needs, were subject to inductive content analysis using the ICF classification system. In other words, the ICF taxonomy was used as a matrix of pre-defined categories, to which the content of individual statements within these sections of the plans could be matched. Two independent researchers with the same level of training and experience with using the ICF, coded 20% of the content of these sections and discussed disagreements until consensus was obtained. This iterative process enhances the trustworthiness of the coding performed. The frequency of each ICF code linked to the needs' sections of the plans was then transformed into an index variable for that type of functioning need, based on average frequency. Results concerning the quality of the description of needs have been reported elsewhere (Castro-Kemp, Palikara & Grande, 2019).

The outcomes included in the analysed plans were rated individually using the GFS III, with 10% of outcomes being independently coded by two researchers, to achieve consensus and increase trustworthiness. For each EHC plan an average quality rating index for outcomes

was created, to enable further analyses. Results concerning the quality of the outcomes have been reported elsewhere (Castro, Grande & Palikara, 2019).

The provision section of the same plans was also subject to content analysis. Here, two independent researchers coded half of the total number of plans each; eight plans were double coded independently to enhance trustworthiness of the process. The purpose of the coding process in this case was to identify every provision action (regardless of whether it referred to an intervention programme, an intervention tool or a strategy) in each EHC plan. The frequency of each type of provision action was computed.

Binomial Logistic Regression was performed to ascertain whether certain groups (between diagnostic groups, types of school, region, and with certain types of needs) were more likely to receive certain provision actions more frequently than others. This process enabled the observation of whether the assessment of functioning needs and its documentation is consistent with the documented provision.

Results

The inter-coder agreement obtained in the process of coding of needs, outcomes and provision in this research is very good to excellent. Previous studies by this team with the same dataset reported 75% agreement on coding needs, and 90% agreement on coding outcomes. In this study, the coding of provision statements resulted in 83.5% agreement.

Table 2 shows the average frequency of each type of needs described in the analysed plans, using the ICF taxonomy. The most frequent needs reported relate to *learning and applying knowledge*, which concerns activities and forms of participation involved in learning to read, learning concepts, learning numeracy, acquiring skills, etc. Other very frequent needs reported were *mental functions* (normally related to emotional regulation issues), *self-care* needs and *interpersonal interaction* needs.

The average quality of outcomes in this sample is considered low, between .86 and 1.62, on a 4-point scale (M=.98, SD=.19).

Table 2

Table 3 illustrates all provision actions included in the analysed EHC plans, per diagnosis, type of school and IDACI position. Forty different forms of provision were identified and coded. Some refer to specific and well-established programmes, such as *Treatment and Education of Autistic and Communication related handicapped Children (TEACCH)* (Mesibov et al., 2004) and standard tools such as the *Picture Exchange Communication Schedule (PECS)* (Overcash, Horton & Bondy, 2010). Others refer to the employment of additional human resources (Occupational Therapists, Speech and Language Therapists and Teaching Assistants), either on a one-to-one basis, or using an embedded approach. Most of the provision actions are general classroom strategies, such as modelling, repetition or pair/small group work. At times, statutory actions are also documented, such as the adoption of a differentiated curriculum. The most frequent provision actions mentioned were *sensory strategies* (in 88.2% of all the plans). These include for example weighted vests or therapy balls (Case-smith, Weaver & Fristad, 2015). Other actions that were mentioned in more than 50% of the plans, overall, were the general use of *structured routines* (but not necessarily a standard intervention programme involving structured routines), *Speech and Language Therapy embedded in the classroom*, *modelling*, *social skills strategies*, *environmental modifications* and *differentiated curriculum/activities*. Embedded approaches were seen more frequently than one-to-one approaches. Other provision actions and strategies mentioned were: *Occupational Therapy embedded in the classroom*, the use of *visual cues* (but not necessarily through a standard tool like PECS), *paired or small group work*, *rewards*,

repetition, *one-to-one Speech and Language Therapy*, *songs and games*, *social stories*, *toilet training*, *the use of technology* (such as iPads and digital applications), *turn-taking toys*, *hospital appointments*, *makaton* (a language programme that uses signs and symbol to support communication (Bednarski, 2016), *one-to-one Occupational Therapy*, *dexterity activities*, *continuous monitoring*, *pre-teaching* (an antecedent type of intervention, where activities are adjusted before their execution to prevent difficulties (LeGray, Dufrene, Mercer, Olmi & Sterling, 2013), *physiotherapy embedded in the classroom*, *phonics/literacy/numeracy targeted interventions*, *nursing embedded in the classroom*, *colourful semantics* (a system where sentences are colour-coded, to encourage the learning of grammar (Hettiarachchi & Ranaweera, 2019), *Lego therapy*, *the use of ear defenders*, *vocabulary games*, *Children and Adolescent Mental Health Services (CAMHS)*, *Attention Autism Programme* (an intervention model that aims to develop spontaneous communication through the use of visually based and highly engaging activities (Watson, Davies & Winterton, 2017), *Play Therapy*, *Reciprocal Teaching* (an instructional activity based on a dialogue between teachers and students to develop reading skills (Rosenshine & Meister, 1994) and other forms of *Alternative and Augmentative Communication (AAC)*, comprising of a range of activities and tools to support speech (Schlosser & Wendt, 2008).

Table 3

Series of Binomial Logistic regression analyses were conducted to examine the effect of diagnosis, type of setting, local authority, overall quality of outcomes, and frequency of needs on the adoption of each of the most frequent provision actions. Only the most frequent provision actions were included, to ensure enough observations were included in the model to enable powerful inferences. Provision actions included covered general classroom strategies

(modelling, repetition, sensory strategies, the use of visual cues, environmental modifications, paired small group, structured routine and various social skills interventions), additional human resources (Speech and Language Therapy embedded in the classroom as well as one-to-one, Occupational Therapy embedded in the classroom and one-to-one), the use of standard tools/instruments (PECS) and statutory strategies (differentiated curriculum). Table 3 presents the parameter estimates resulting from this analysis, where relationships were observed between the adoption of a provision action and another variable of interest. Assumptions for performing this type of analysis were tested and met in all models presented: the adoption of a specific provision action was measured in a dichotomous way, independent variables are continuous and categorical, observations are independent and there is a linear relationship between continuous independent variables and the logit transformation of the dependent variable. The goodness-of-fit of the models presented was tested using the Hosmer and Lemeshow test and variance of explained effects was analysed by interpreting Cox and Snell R square as well as Nagelkerke R square.

Table 4

Relationship between provision and diagnosis, type of placement and IDACI (region)

Results show that in most cases there is no relationship between the adoption of a certain type of provision and the diagnosis of the child, with the exception of two classroom strategies and one strategy involving additional human resources: children with ASD and SLC were more likely to use visual cues in the classroom (the model has good fit [$\chi^2(6)=9.53$, $p=.146$] and explains between 27% and 36% of the variance in using visual cues); children with diagnoses other than ASD and SLC were more likely to have environmental modifications (the model has good fit [$\chi^2(6)=4.73$, $p=.69$] and explains between 23% and 30% of the

variance in adoption environmental modifications) and children with SLC were more likely to have Occupational Therapy embedded in the classroom (the model has good fit [$\chi^2(7)=13.7$, p=.07] and explains between 20% and 26% of the variance in having Occupational Therapy embedded in the classroom).

A more apparent relationship was observed between type of placement and the adoption of certain classroom strategies: children in mainstream settings are more likely to use PECS (the model has good fit [$\chi^2(7)= 3.57$, p=.828] and explains between 18% and 24% of the variability in using PECS), visual cues (the model has good fit [χ^2 (6)=9.53; p=.146] and explains between 27% and 36% of the variance in using visual cues), sensory strategies (the model has good fit [χ^2 (7)=.492, p=.999] and explains between 33% and 64% of the variance in using these strategies) and various social skills interventions (the model has good fit [χ^2 (7)=12.19; p=.095] and explains between 19% and 25% of the variance in using these interventions).

There is no relationship between the region where the EHC plan comes from and the use of specific provision actions.

Relationship between provision and quality of outcomes

Results show that there is no relationship between the quality of the outcomes included in the EHC plans and the adoption of specific provision actions, with the exception of additional human resources, in particular one-to-one Occupational Therapy (the model has good fit [$\chi^2(6)=2.49$, p=.87] and explains between 18% and 35% of the variance in using this resource) and embedded Occupational Therapy (the model has good fit [$\chi^2(7)=13.07$], p=.07] and explains between 20% and 26% of the variance in using this resource). EHC plans who included these additional resources as provision actions tended to have higher quality outcomes that those plans that did not include them.

Relationship between provision and frequency of different needs

Six types of provision action have been shown to be associated with the type of need children present. However, the majority of provision actions are not associated with having particular needs. Within general classroom strategies, effects were found for the use of visual cues, paired/small group work and structured routine. Visual cues were more often used with children who have documented needs related to learning and applying knowledge, to mental functions (mostly related to emotional regulation), to self-care needs and domestic life needs (model with good fit [$\chi^2(8)=2.65$, $p=.95$], explaining between 45% and 69% of the variance in the use of visual cues).

Within the tools and instruments type of provision action, effects were found for the use of PECS, which more often used when children have documented interpersonal interaction needs and self-care needs (model with good fit [$\chi^2(8)=5.12$, $p=.74$], explaining between 33% and 46% of the variance in the use of visual cues).

Additional human resources, in particular the adoption of Occupational Therapy embedded in the classroom, was more often seen in children with documented mobility needs and needs associated with domestic life (model with good fit [$\chi^2(8)=3.71$, $p=.883$], explaining between 23% and 32% of the variance in the use of visual cues). The same effects were not seen when considering one-to-one Occupational Therapy. A differentiated curriculum was more fote seen for children presenting with neuromusculoskeletal functions' needs (model with good fit [$\chi^2(8)=6.88$, $p=.550$], explaining between 20% and 27% of the variance in the use of differentiated curriculum).

No relationship between type of needs and other types of provision actions was found (Speech and Language Therapy embedded in the classroom, modelling, repetition, sensory

strategies, Speech and Language Therapy one-to-one, environmental modifications, Occupational Therapy one-to-one and other social skills interventions).

Discussion

The current study aimed to examine the goodness-of-fit between functional needs, outcomes and provision documented in the statutory documents of young children with special educational needs and disabilities in England, the EHC plans. In doing so, it is the first study to date to examine the consistency between assessment and intervention in the statutory documents, whose quality has been the object of criticism and controversy (Boesley & Crane, 2018; Palikara et al., 2019). While several other studies have reported substantial concerns regarding the way in which the voice of the child is portrayed in these plans (Palikara et al., 2018), low quality outcome design (Castro, Grande & Palikara, 2019) and fragmented documentation of needs (Castro-Kemp, Palikara & Grande, 2019), the current study shows that: first, there is no link between the child's diagnosis and the adoption of specific provision actions in the statutory documents; second, mainstream settings adopt (or document) more often classroom strategies than special settings; third, additional human resources seem to be related to higher quality outcomes; and fourth, a well-defined set of provision actions, which are classroom strategies, are more frequently used with children presenting the most frequent needs (mental health, learning, self-care, domestic life, mobility and interpersonal interaction); these provision actions are the use of visual cues, PECS and Occupational Therapy embedded in the classroom (particularly for mobility needs).

The overall lack of match between provision actions and diagnosis might be seen as good news: if we are to implement a model of assessment-intervention that is individualised depending on unique functioning needs, then diagnostic information alone will not be helpful in providing information for intervention purposes. This is consistent with findings from

previous studies showing that functioning is unrelated to diagnosis (Castro & Pinto, 2015; Pinto et al., 2018). If the lack of association between provision actions and diagnosis is illustrating a more individualised intervention approach, which is tailored to specific functioning needs rather than diagnostic labels, then this finding is a positive illustration of good practice in assessment-intervention in England.

Classroom strategies are more often adopted in mainstream settings rather than special settings. This finding is to be expected and most likely reflects the English trend according to which the most severely functioning children will attend special schools, while the most high functioning still attend mainstream settings; it is likely that in the latter, a wider range of strategies might be employed to promote positive functioning of children with disabilities alongside typically developing peers.

The most striking finding from this study is the association between the use of additional human resources, in particular of Occupational Therapy embedded in the classroom, and higher quality outcomes. The significance of this finding necessarily emphasises the importance of multi-agency collaboration in assessment and provision for young children with disabilities; those children who had the additional support of an occupational therapist in the classroom, also have higher quality, more well-defined, 'smarter' and more achievable outcomes than those children who did not have such additional support and whose plans are, therefore, mere education plans, rather than true Education, Health and Care plans. This finding adds to the evidence available that teamwork in early childhood intervention leads to better quality provision (Coufal & Woods, 2018; Rausch, Bold & Strain, 2020). However, it also illustrates that the use of additional resources is not a given in EHC provision in England, and many of these plans do not mention any form of intervention outside the education sector. This finding objectively reflects the concerns highlighted by professionals

in England about the implementation of the current policy for SEND, which in practice is still not leading to cross-professional collaboration (Palikara et al., 2016).

Some provision actions seem to be associated with the most frequent needs observed in these EHC plans, namely the use of visual cues, PECS and Occupational Therapy in the classroom. This is true for those plans who have frequent mental health, learning, self-care, mobility and interpersonal interaction needs, which might suggest that when needs are well described, provision is more specific. This finding underlines the importance of having an exhaustive framework for describing the individual needs of children in detail; we argue for the relevance and potential of the ICF classification system in supporting this detailed description and for its inclusion in the English EHC planning process as a common language and classification system to be used by all professionals across sectors (Castro-Kemp, Palikara & Grande, 2019).

The current study has limitations, for example, the use of a convenience sample from Greater London, with participant schools and professionals being part of the research network that the research team has established. A nation-wide sample would have provided a clearer picture of what is happening nationally in relation to statutory documentation and strengthen the significance of the findings. It could have provided, as well, a more balanced approach between deprived areas and affluent areas, in terms of group size. Nevertheless, the sample of this study includes children from a variety of backgrounds, with similar deprivation variation as the population of England: some of the local authorities included in the study are the most affluent in the country, some of them are the most deprived in the country and some are somewhere in the middle of that range (Smith et al., 2015). That fact, allied to the fact that rigorous and significant statistical estimations were conducted, are strong enough arguments to lead us to consider that these results are likely to apply to a wider population.

Lastly, a true estimation of the consistency between assessment and intervention, as well as a reliable evaluation of whether professionals are better at intervening than planning, would only be possible through systematic observations of their practice and training. This was not, however, the purpose of the current research, whose main aim was to focus on statutory documentation and its value. Statutory documentation might be regarded as a reflection of how professionals work in practice, however, in this study, our aim was to demonstrate how the documents themselves can provide a source of support to everyday planning and intervening with young children with special educational needs and disabilities.

Conclusion

This study aimed to examine the goodness-of-fit between functional needs, outcomes and provision actions documented in the statutory documents of young children with special educational needs and disabilities in England, the EHC plans. Findings suggest that statutory provision actions are being designed independently from diagnosis and are more based on individual functioning needs, as proposed by the current policy for SEND in England. Mainstream settings are adopting classroom-wide strategies more often than special settings. The inclusion of additional human resources as part of provision is associated with higher quality outcomes, thus underlining the well-recognised benefits of multi-agency work (e.g. Coufal & Woods, 2018; Rausch, Bold & Strain, 2020). And lastly, when needs are described in detail, provision actions are more specific. No differences were found between local authorities (regions) in regard to the type of provision adopted.

This study adds to the body of evidence concerning the quality of the recently introduced EHC plans in England, with implications for practice and policy: first, while our findings suggest that a more functional approach to documenting disability is being adopted (in accordance with the current policy for SEND in England), it is also clear that much still could

be done to improve the EHC planning process. This involves, for example, the inclusion of additional human resources whenever possible, as both seem to lead to higher quality statutory provision, as documented in the EHC plans, and the adoption of a standard and common language to support more specific descriptions of needs, which could be the ICF. Although the inclusion of the ICF in this process would require the development of appropriate resources and training, some of these have already been made available to professionals interested in this approach (Castro, Palikara, Gaona & Eirinaki, 2018). Lastly, a similar process of adopting the ICF to improve documentation has been adopted in other countries worldwide (e.g. Japan, Switzerland), with findings supporting a more holistic approach to disability provision (Okawa & Ueda, 2008; Hollenweger, 2011). We, therefore, that the inclusion of the ICF as a supporting system to document children's strengths and needs and respective provision should be considered as an integral part of the SEND system in England.

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Declaration of interest

The authors have no conflicts of interests.

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