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Beyond the Toxic Trio: Exploring Demand Typologies in Children's Social Care

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Abstract

Demand for children's social care is often conflated with rates of intervention and associated with a limited constellation of parental risk factors. This article reports on a more comprehensive picture of demand obtained through a quantitative study of child welfare interventions in England. Longitudinal child-level data were combined from children's social care services in six English local authorities over a four-year period (2015–2018). Latent class analysis was undertaken for a random sample of child episodes where an assessment was undertaken ($n = 15,000$). The results were tested for consistency across LAs and to identify the most appropriate number of classes. Conditional probabilities were used to interpret the demand represented by each class, and to explore the relationship between typologies and child characteristics such as age, gender and ethnicity. The analysis found seven classes, or typologies of demand, to be present in factors at assessment across all the LAs, which were linked to certain child characteristics and intervention pathways. The findings go beyond the 'toxic trio' terminology often used to profile risks to children and support the innovative use of administrative data to provide insight into patterns of demand. Implications are discussed for strategic responses to child welfare problems and the multi-agency context of prevention.

Keywords: child abuse, child protection, demand, quantitative analysis, risk factors

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Introduction

In England, children's social care (CSC) designates a range of services including children's centres, Early Help, child protection and provision of out-of-home care. CSC services are mainly provided by municipal governments, or 'local authorities' (LAs), which vary greatly in terms of size, population and demographics (Bywaters *et al.*, 2020; Hood *et al.*, 2020a). The main enabling legislation for CSC services is the 1989 Children Act. Among its provisions, Section 17 sets out a general duty for LAs to safeguard and promote the welfare of 'children in need' within their areas, while Section 47 sets out a duty to make inquiries about and take action to protect children who may be at risk of significant harm. In operational terms, procedures for providing (or deciding whether to provide) services to fulfil these duties are generally triggered by a contact or referral to CSC services. This article focuses on statutory CSC as defined by Sections 17 and 47, which includes assessments, investigations, interventions and care plans from the point of referral up to the point of a court order or other decision to accommodate a child in care. The tiered structure of the English CP system is summarised below and further described in Hood *et al.* (2019).

Over the last decade, there has been increasing concern about spiralling demand for CSC in England (Action for Children, National Children's Bureau and The Children's Society, 2017; Association of Directors of Children's Services, 2018; National Audit Office, 2019). It has been found that one in five children are referred to children's services and one in nineteen investigated before the age of five years (Bilson and Martin, 2017). Some of this demand is driven by conditions experienced by children in the most deprived households, such as falling incomes, precarious employment, poor quality housing and food poverty (Sidebotham, 2012; O'Hara, 2015; Department for Work and Pensions, 2020). These problems have been exacerbated by macro-economic shocks such as the 2007–2008 financial crisis and the Covid-19 pandemic, and by austerity policies that have selectively and disproportionately affected more deprived areas and communities (Webb and Bywaters, 2018). Under austerity, LAs have cut universal provision and preventative services in an effort to protect core statutory provision (Action for Children, National Children's Bureau and The Children's Society, 2017; Centre for Cities, 2019), with a corresponding escalation in problems presenting at the 'front door' of CSC (Hood *et al.*, 2020b). Supply-side factors include leadership, models of practice or inspection outcomes, which are likely to vary according to the LA context (National Audit Office, 2019). Decisions and judgements in the family court system also shape the interpretation of thresholds and the way LAs discharge their statutory duties and powers (Hodges and Bristow, 2019). Bywaters *et al.*

(2020) have shown that stark inequalities in provision are also a feature of the sector; for example, children in the most deprived neighbourhoods nationally are over ten times more likely to be placed into care than those in the least deprived neighbourhoods. LAs that are on average less deprived have lower levels of the overall demand but also tend to have higher rates of intervention than more deprived LAs after adjusting for the level of neighbourhood deprivation—the ‘inverse intervention law’ (Bywaters *et al.*, 2015). The level of income inequality in LAs has also been found to affect the social gradient of intervention (Webb *et al.*, 2021). Such inequities point to an insufficient understanding of demand and how services respond to needs in the community (National Audit Office, 2019).

Categorising demand and the ‘toxic trio’

The usual starting point for categorising demand is its vertical differentiation through what Gibbons *et al.* (1995) called a ‘filter-and-funnel’ system. It is characterised by a series of thresholds that are used to assess new referrals and respond to new information on cases already in the system. Functional specialisation in social work teams is geared around the same thresholds. Hood *et al.* (2020a) summarise them as follows:

1. referral to CSC;
2. no further action taken (NFA);
3. a child and family assessment is carried out (Assessment);
4. following assessment, the child is found not to be ‘in need’ (Assessed not CIN). Such cases may be referred to a non-statutory service or ‘early help’ provision;
5. Children In Need (CIN)—following assessment, the child is found to be ‘in need’ as defined in Section 17 of the 1989 Children Act. CIN often have complex needs and are entitled to receive a statutory service, usually a multi-agency plan coordinated by a social worker;
6. Child protection (CP)—activities carried out under Section 47 of the 1989 Children Act, which include strategy meetings, investigations, CP case conferences and CP plans; and
7. Public law outline (PLO)—activities carried out when the LA is considering or undertaking an application to court for an order under Section 31 of the 1989 Children Act (care proceedings).

Beyond operational/legal thresholds, demand can also be differentiated on the basis of presenting needs and their causes. Most of this information is held in case notes, reports, assessments and other professionally mediated texts. However, some administrative data are recorded by social workers carrying out child and family assessments,

who select one or more 'factors identified at assessment' from a list provided by the [Department for Education \(2018\)](#). A broad classification also accompanies the decision to place a child on a CP plan, for which one of four risk categories will be recorded: physical abuse, sexual abuse, emotional abuse or neglect. A descriptive analysis of these types of demand can be found in annual government reports based on LAs' administrative returns ([Department for Education, 2020](#)). The latest of these reports (covering the year 2018–2019) confirms that the two most common factors at assessment were domestic abuse and parental mental health, which together constituted a third of all factors identified. For CP plans, the most common risk categories were 'neglect' and 'emotional abuse', which together account for over four-fifths of CP plans ([Department for Education, 2020](#)). Information about severe risks to children is also contained in serious case reviews, which are carried out in exceptional cases when a child dies or is seriously harmed from abuse or neglect. Thematic analysis of case reviews has pointed to the cumulative effect of risk factors in the home environment, particularly the combination of domestic abuse, substance misuse and mental illness ([Sidebotham et al., 2016](#)), as well as the potential for neglect to lead in some circumstances to serious and even life-threatening outcomes for children of all ages ([Brandon et al., 2014](#)). Particularly influential in shaping CP practice has been the notion that three risk factors in particular (domestic abuse, mental health and substance misuse) cluster together as a 'toxic trio' that should be seen as a flag for potential maltreatment ([Cleaver et al., 2011](#); [Brandon et al., 2012](#)).

In summary, current thinking on demand is dominated by the idea that the 'toxic trio' cluster of risk factors is likely to give rise to adverse outcomes for children and therefore requires intervention at higher operational/legal thresholds. However, this idea has not yet been systematically explored with child-level administrative data. Perhaps as a result, the term has become a kind of shorthand for multiple problems that may be experienced by children and their families. Moreover, none of the forty factors at assessment that can be recorded by social workers include information about a family's socio-economic circumstances, including issues such as poverty, unemployment, low income, debt, precarious or unsuitable housing, which have a direct bearing on children's welfare as well as on parental resources and capabilities. The focus on individual risk factors, and on the 'toxic trio' in particular, has arguably obscured the importance of poverty and inequality in driving demand for CSC ([Morris et al., 2018](#)). Pressures on CSC services have further increased as a result of the Covid-19 pandemic, making this is a timely point at which to interrogate current understandings of demand through an empirical analysis of administrative data.

Methods

The overall aim of the study was to explore the evidence for demand typologies in CSC. It formed part of a larger project examining the link between system conditions and welfare inequalities in children's social care (Hood *et al.*, 2020a). Specific research questions were:

1. is there evidence for consistent typologies of demand for CSC services based on the needs identified in social work assessments?
2. what is the relationship between demand typologies and child characteristics such as gender, age, ethnicity and socio-economic circumstances? and
3. how do intervention pathways vary between the different typologies?

The study was reviewed by the research ethics committee of the lead author's university. A detailed methodological account, including sampling and data collection, can be found in Hood *et al.* (2020a). In brief, administrative data were obtained for all children referred to statutory social care services in six South East English LAs over a four-year period (2015–2018). Data were provided in the form of anonymised extracts from LAs' annual statutory returns to central government, which were therefore comparable across agencies and over time. The combined dataset had around 115,000 episodes, where an episode comprised all events (e.g. assessments, investigations and care plans) occurring between child's referral to CSC and eventual case closure. Geographical codes were used to link each episode to a national deprivation measure called the Index of Multiple Deprivation (IMD; Department for Communities and Local Government, 2015). IMD is calculated as a weighted score for neighbourhoods called Lower Layer Super Output Areas (LSOAs). It comprises seven domains of deprivation: income (22.5 per cent); employment (22.5 per cent); education, skills and training (13.5 per cent); health and disability (13.5 per cent); crime (9.3 per cent); barriers to housing and services (9.3 per cent) and living environment (9.3 per cent). LSOAs vary in size and population but on average each is comprised of 361 children across 672 households (Office for National Statistics, 2011). LA-level deprivation was measured by the average IMD score for all LSOAs in that LA, where a higher IMD score corresponds to greater deprivation.

Latent class analysis (LCA) was used to answer research question one. The purpose of LCA is to derive a 'latent variable', which cannot itself be measured or observed, from a combination of 'indicator variables', which can be measured (Vermunt and Magidson, 2002; Collins and Lanza, 2009). Latent classes are characterised by unique conditional probabilities associated with each indicator variable, which must be interpreted into meaningful categories. In this study, indicator variables

consisted of the needs identified by social workers in child and family assessments. In the CIN Census returns, these are recorded as forty possible 'factors at assessment', any number of which may be identified within a single assessment (Department for Education, 2018). The overall sample contained 91,309 assessments, with factors recorded in 80,448 of them. Some episodes had more than one assessment, in which case all the factors from these assessments were linked to that same episode. Due to low numbers ($n < 10$), a small number of factors were removed from the analysis: private fostering, unaccompanied asylum-seeking children and trafficking. 'Other' was also excluded because this factor was recorded by some LAs but not by others. Because LAs in the sample differed in population and therefore in number of episodes, the LCA was carried out on a random sample of 2,500 episodes from each LA so as not to bias latent classes towards larger LAs, giving a total of 15,000 episodes. Conditional probabilities and fit statistics for selecting the number of classes were cross-validated using multiple random samples of the same size. This reduced the likelihood that the latent classes were an artefact of the specific random sample (Nylund *et al.*, 2007).

The LCA was carried out independently on all six LAs. Ten models, each with a different number of classes, were calculated for each LA, examined with Bayesian information criterion (BIC) and Akaike information criterion (AIC) scores, and subjected to invariance testing (Kankaraš *et al.*, 2012). Invariance models test whether all latent classes have equivalent underlying structures in all LAs, i.e. whether they reflect the same thing everywhere. This is done by comparing the model fit of models where latent class loadings are fixed to be equal across groups (invariant model) to the model fit of latent class models where they are allowed to be freely estimated for each group (configural model). The results showed that a justification could be made for either a six- or seven-class model. A seven-class model was preferred due to it offering improvements in both AIC and BIC when conditional probabilities were fixed across groups (see Table 1). The seven-class invariant model offered improvements in model fit as measured by the BIC ($\Delta\text{BIC} = -2235$), but not by AIC ($\Delta\text{AIC} = 4154.6$), which has a lower penalty for additional parameters. This was considered good enough evidence for general invariant models to be informative in answering the research questions. This finding also suggested some degree of transferability to LAs outside the study sample, although the precise structure of each class is likely to vary across different children's services.

The final step was to assign each episode to one of the seven classes in the best-fit invariant model for the purpose of further analysis. The factor loadings for each class are presented in the findings.

For research question two, all the episodes within each latent class were stratified according to child characteristics. Analysis of gender involved a binary comparison of intervention rates for male and female

Table 1. Fit statistics showing AIC/BIC invariance testing

Class size	Configural		Invariant	
	AIC	BIC	AIC	BIC
6	155,851.5	162,332.5	160,396.5	161,508.4
7	154,994.9	162,709.7	159,149.5	160,474.7

children, this being how gender was recorded by services. Analysis of age involved a comparison of rates of intervention for children in yearly age groups from 1 to 17 (using child population data from the Office for National Statistics as the denominator). Analysis of ethnicity involved a split between broad ethnic categories as defined in the statutory guidance (Department for Education, 2018). Analysis of socio-economic circumstances involved a comparison of tertiles of deprivation, using the IMD score of the LSOA where the child lived.

For research question three, all episodes within each latent class were stratified according to the intervention pathway following an assessment (see below). A regression model was then estimated using neighbourhood (LSOA) IMD scores to predict rates of intervention for each class. Several increments of intervention were predicted:

- *assessed not CIN* (no further service provided);
- provision of services to children in need (*CIN*) but no CP intervention;
- child protection investigation (*'Section 47 inquiry'*);
- child protection case conference (*CP conference*);
- child protection plan (*CP plan*) and
- accommodation in care (Child Looked After or *CLA episode*).

Finally, a synopsis of findings was presented to members of the Family Research Advisory Group coordinated by the National Children's Bureau, in order to assist with interpretation and improve the accessibility of subsequent reporting. The group includes people with experience of CSC services including of the CP and care system. Their feedback and comments are incorporated into the discussion of findings.

Findings

The LCA found seven classes across the six LAs, each of which was named according to the single or combined conditional probabilities for each factor at assessment. A full breakdown of the conditional probabilities for each class is shown in Table 2. Overall, there were three classes that were dominated by a single factor at assessment, and four classes that were characterised by multiple needs and risks.

The three 'single factor' classes can be summarised as follows:

1. *Neglect*—episodes where neglect was assessed on its own, i.e. rarely in combination with other factors;
2. *Domestic Violence*—episodes where domestic violence was assessed as the single major factor, sometimes in combination with emotional abuse and/or alcohol misuse; and
3. *Physical Abuse*—episodes where physical abuse was assessed as the single major factor, sometimes in combination with emotional abuse and/or neglect.

The four 'multiple factor' classes can be summarised as follows:

4. *beyond parental control/highly vulnerable*—episodes in which a range of factors were likely to be assessed together. These included socially unacceptable behaviour, child's mental health problems, sexual abuse, child sexual exploitation, child's drug misuse and/or self-harm;
5. *complex needs I*—episodes in which domestic violence was likely to be assessed in combination with parental mental health problems, with parental alcohol and/or drug misuse, and/or emotional abuse;
6. *complex needs II*—episodes with a much higher likelihood of all the factors in Class 5, particularly domestic violence and emotional abuse, as well as additional factors such as physical abuse, neglect and/or the child's mental health;
7. *disability and mental health*—episodes in which a child's physical or learning disability was combined in some cases with parental disability and/or mental health problems.

These seven classes were consistently present across all the LAs, i.e. similar combinations of factors were found as summarised above (and in [Table 2](#)). However, there were differences between LAs in terms of the proportion of demand represented by each class. The breakdown per LA is shown in [Table 3](#).

[Table 3](#) shows that Complex needs I was the most common class in all but one of the LAs (LA3). This was followed by Domestic violence (single factor) in the two most deprived LAs (LA5 and LA6) and the Beyond parental control/highly vulnerable class in the other LAs. Complex needs II, which was the class with the highest likelihood of multiple risks to children, accounted for the smallest proportion of demand in every LA except one (LA4).

Table 2. Breakdown of factors at assessment in each latent class

Factors at assessment ^a	1. Neglect (%)	2. Domestic violence (per cent)	3. Physical abuse (per cent)	4. Beyond parental control /highly vulnerable	5. Multiple complex needs I (per cent)	6. Multiple complex needs II (per cent)	7. Disability and mental health (per cent)
Child sexual exploitation	1	0	0	12	0	8	1
Child's alcohol misuse	0	0	0	4	0	12	1
Child's drug misuse	0	0	0	10	0	17	0
Child's learning disability	0	2	2	5	2	17	42
Child's mental health	0	1	0	21	2	35	16
Child's physical disability	1	1	1	1	1	8	25
Domestic violence relating to the child	0	14	2	4	8	46	4
Domestic violence relating to the parent	4	100	3	3	43	76	4
Emotional abuse	3	9	14	8	24	60	3
Gangs	0	0	0	8	0	8	0
Going/being missing	0	0	0	7	0	7	0
Neglect	100	0	7	5	15	41	6
Parent's alcohol misuse	1	7	0	2	25	35	0
Parent's drug misuse	3	2	0	3	21	27	1
Parent's learning disability	1	0	0	0	2	5	5
Parent's mental health	5	0	2	9	42	58	25
Parent's physical disability	1	0	1	1	4	14	14
Physical abuse	0	3	100	4	9	41	2
Self-harm	0	0	0	9	1	19	8
Sexual abuse	0	0	1	16	2	8	0
Socially unacceptable behaviour	2	1	1	26	2	23	6
Young carer	1	0	0	1	2	12	9
Total number of episodes (%)	8,150 (13)	10,747 (17)	7,332 (12)	13,100 (21)	16,430 (26)	1,960 (3)	4,614 (7)

^aSource: DfE, 2018. Only those factors contributing to at least one of the latent classes are listed.

Table 3. Proportion of episodes in each class of demand

Classes	LA1 (per cent)	LA2 (per cent)	LA3 (per cent)	LA4 (per cent)	LA5 (per cent)	LA6 (per cent)	Total (per cent)
1. Neglect	17	5	16	4	8	3	13
2. Domestic violence	15	15	20	19	22	27	17
3. Physical abuse	13	9	8	7	15	8	12
4. Beyond parental control/highly vulnerable	20	25	29	20	18	19	21
5. Multiple complex needs I	26	32	21	29	25	30	26
6. Multiple complex needs II	3	7	1	8	2	3	3
7. Disability and mental health	6	8	6	11	10	11	7
Total	100	100	100	100	100	100	100

Child characteristics

Once all the episodes were assigned to a latent class, they were stratified according to child characteristics, starting with gender. [Figure 1](#) shows the ratio of males to females in each LA and demand class. The findings suggest that boys were consistently more likely to be assessed in the Disability/mental health class, whereas girls were more likely to be assessed in the Complex needs I and Beyond parental control/highly vulnerable classes. Other classes saw more variation in the gender split between LAs. The Neglect (single factor) class featured more boys in LA2 and LA4 but more girls in LA5. The Complex needs II class had more boys in LA6 but more girls in LA2 and LA3. The Physical abuse class had more boys in LA1 and LA2 but more girls in LA3, LA4 and LA5.

Age was the next child characteristic to be analysed. Results were based on the rates of total episodes (per 10,000 population) for single year groups from 0 to 17. In every demand class except two (Beyond parental control and Disability/mental health), rates of episodes for infants (under one year) were found to be much higher than for children in any other yearly age group. Treating this as a distinctive finding, the results otherwise suggested that demand classes fitted into three different age profiles. First, there were the demand classes that were associated with younger children: Neglect, Domestic Violence and Complex needs I. These are illustrated in [Figure 2](#), which shows that (following a steep drop from under 1 s) rates for these demand classes tended to fall with each additional year of age. This was a steady trend for Domestic violence and Complex needs I, but for Neglect was characterised by a steep drop-off after the age of thirteen years.

Secondly, there were demand classes associated with older children: beyond parental control/highly vulnerable, Complex needs II and Disability/mental health. These are illustrated in [Figure 3](#), which shows that (following a drop from under 1 s) rates in these classes tended to go

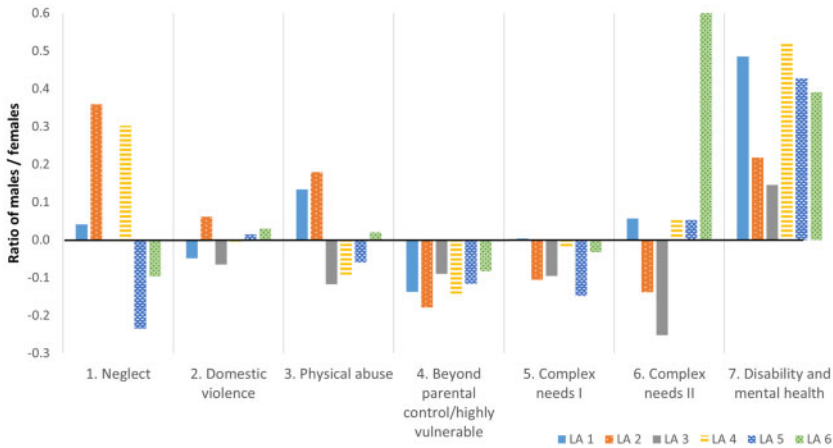


Figure 1: Ratio of male/female intervention rates in each class.

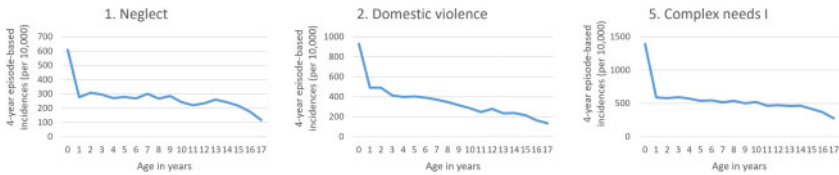


Figure 2: Demand classes associated with younger children.

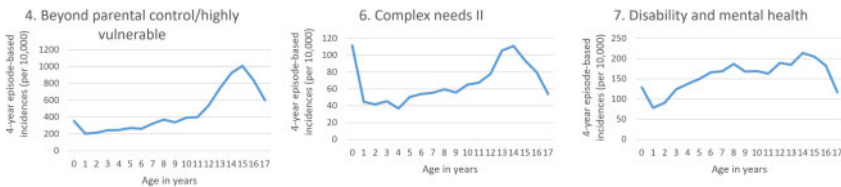


Figure 3: Demand classes associated with older children.

up with every year of age until fourteen or fifteen, at which point they went down quite steeply. This means that the Complex needs I and II categories had opposite age profiles. The Disability/mental health class showed an overall upward trend but also two peaks in rates of assessment, first around age eight years (when children are in primary school) and, subsequently, around age fourteen years (secondary school).

Finally, physical abuse had a different age profile from the other demand classes. This is illustrated in Figure 4, which for children aged

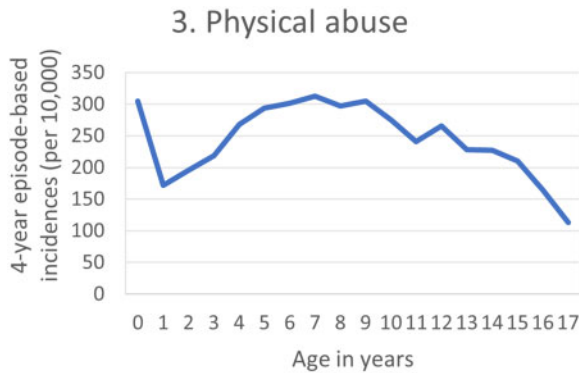


Figure 4: Age profile for physical abuse.

more than one year shows an initial upward trend in rates up to around five to nine years and then a decrease for subsequent age groups. Rather than a linear trend, this convex or ‘humped’ profile suggests that this type of demand was particularly associated with school-age children.

Ethnicity was the next child characteristic to be analysed, based on population-based rates in the categories used by the Department for Education. The results are illustrated below in Figure 5. It shows that most of the demand classes had higher rates for children from Black/Black British, Mixed and Other ethnic groups. This was particularly the case for certain classes: Domestic violence, Physical abuse, Beyond parental control/highly vulnerable and Disability/mental health. In contrast, Asian/Asian British children were less represented than other groups for most classes. The same was true for White children except in the Neglect and Complex needs II classes. However, it should be noted that these results were not adjusted for deprivation, and that White British children represented the majority of episodes everywhere except in LA5, where they were the largest minority.

The final characteristic to be analysed was neighbourhood-level deprivation. Table 4 shows the breakdown of demand classes by deprivation tertile in all six LAs. The results suggest a fairly even deprivation split across most demand classes, with two exceptions. One was Neglect, which had a higher percentage of episodes with children in the most deprived tertile of neighbourhoods. The second was Domestic violence, which had a lower percentage of episodes with children in the most deprived tertile of neighbourhoods.

In order to explore these patterns further, regression analysis was used to model the effect of changes in deprivation on rates of child and family assessments in each demand class (based on rates per 10,000 population in each decile banding). The results can be seen below in

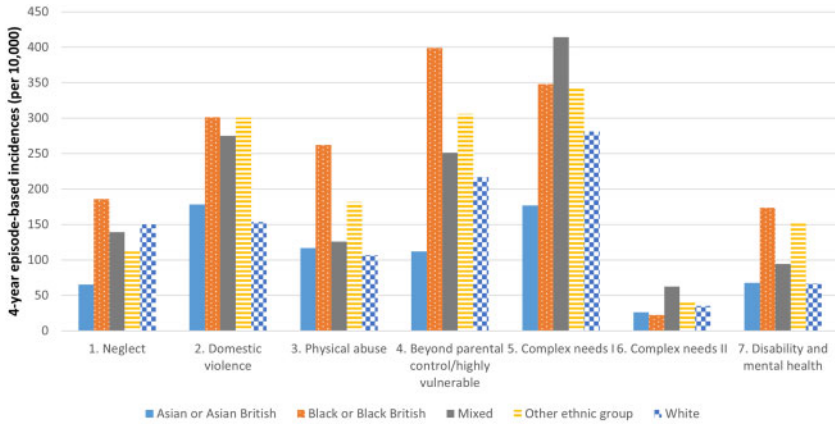


Figure 5: Breakdown of demand classes by ethnicity.

Table 4. Proportion of episodes in each tertile of deprivation in seven classes of demand

Classes	1 (least deprived), per cent	2 (middle tertile), per cent	3 (most deprived), per cent	All children, per cent
1. Neglect	10	11	15	13
2. Domestic violence	19	19	16	17
3. Physical abuse	12	12	12	12
4. Out-of-control/highly vulnerable	22	21	21	21
5. Multiple complex needs I	26	27	26	26
6. Multiple complex needs II	3	3	3	3
7. Disability and mental health	8	8	7	7
Total	100	100	100	100

Table 5, which shows that a decile increase in deprivation was associated with an increase in the odds of being assessed in every class of demand. This was particularly noticeable for the Neglect class. Some differences were observed among the LAs. For example, membership of the ‘Complex needs II’ class was more strongly influenced by neighbourhood deprivation in LA4 than in LA5 and LA6. Deprivation levels seemed to have less influence on rates of assessment in two demand classes: Beyond parental control/highly vulnerable and Disability/mental health.

Intervention pathways

The findings so far have focused on the assessment stage of CSC involvement. The final part of the analysis explored the overall

Table 5. Effect of a rise in LSOA-level deprivation on the chances of being assessed

Classes	Neglect, per cent	Domestic violence, per cent	Physical abuse, per cent	Beyond parental control, per cent	Complex needs I, per cent	Complex needs II, per cent	Disability/ mental health, per cent
LA1	+33	+21	+24	+23	+24	+27	+17
LA2	+32	+13	+14	+15	+22	+28	+30
LA3	+35	+26	+29	+26	+27	+22	+27
LA4	+20	+20	+23	+18	+30	+42	+19
LA5	+22	+24	+22	+16	+18	+16	+17
LA6	+62	+25	+30	+38	+32	+16	+34

Table 6. Breakdown of episodes within each class at different thresholds

Classes	Assessed Not CIN	CIN (no CP)	CP Plan	CLA episode	Total
1. Neglect	55%	24%	15%	6%	100%
2. Domestic violence	61%	30%	9%	1%	100%
3. Physical abuse	65%	22%	10%	4%	100%
4. Beyond parental control/highly vulnerable	59%	32%	6%	3%	100%
5. Complex needs I	50%	29%	17%	5%	100%
6. Complex needs II	18%	29%	37%	15%	100%
7. Disability/mental health	44%	49%	5%	2%	100%
Total	55%	30%	12%	4%	100%

intervention pathways within each demand class, based on the principal thresholds noted earlier:

- assessed not CIN;
- CIN (no CP);
- CP plan and
- CLA episode.

The results are shown in [Table 6](#). The demand class with the highest proportion of CP and CLA episodes was the Complex needs II class, although even with this type of demand it was found that just under half of cases did not meet the threshold for CP. The Disability/mental health class had the highest proportion of CIN (not CP), which is unsurprising as children with a disability are automatically defined as CIN (under Section 17 of the 1989 Children Act). In the other five demand classes, the most common outcome of an assessment was 'assessed not CIN', which represented over 60 per cent of cases in the Physical abuse and Domestic violence classes.

Discussion

The findings provide evidence that demand for CSC services can be broken down into heterogeneous categories—demand typologies—linking clusters of assessed needs to child characteristics and intervention pathways. Demand typologies offer an alternative and arguably more meaningful approach to conceptualising and measuring demand than conventional approaches such as ranking the prevalence of risk factors, aggregating the number of interventions at a particular threshold or undertaking thematic analysis of serious case reviews (Skinner et al., 2021). There are practical implications not only for the way agencies and professionals understand child welfare but also for the design and delivery of services. Before discussing these issues further, it is necessary to note some limitations to the methods and findings reported above. Although a large number of episodes were considered over a four-year time period, the sample size of six LAs does limit the generalisability of findings to the sector as a whole, or to other jurisdictions. Another limitation was the reliance on neighbourhood (LSOA) deprivation scores as an indicator of the socio-economic circumstances of children and parents receiving CSC services. The limitations of approximating the socioeconomic status of families through small-area measures of deprivation have been comprehensively discussed elsewhere (Webb et al., 2020). The typologies therefore constitute a promising avenue of exploration that may well vary with contextual conditions in separate jurisdictions. Furthermore, the administrative data may not yield a complete or wholly accurate picture of children's needs; for example, a recent study carried out in Wales showed that information about parental learning disability was inconsistently recorded by social workers (Burch et al., 2019). It is also not possible from administrative data alone to capture the holistic assessment of children's needs that is carried out by social workers, and which may be evident in reports and qualitative case file notes.

Within these limitations, the findings nonetheless raise questions about the extent to which professional understandings of risks to children have come to be framed by the 'toxic trio' label (Brandon et al., 2008). On the one hand, the combination of domestic violence, mental illness and alcohol/drug misuse was a feature of the two 'Complex needs' classes, which had the highest proportion of CP and CLA episodes. On the other hand, the class that was indicative of the highest risk to children, Complex needs II, made up only 3 per cent of episodes on average and nearly half of these did not meet the threshold for CP or CLA. The other Complex needs class was the most common type of demand, constituting more than a quarter of cases on average. Half of these were assessed as not CIN and over a quarter were addressed under

a CIN plan without any CP interventions. The conditional probabilities of this class also suggest that the most common cases are more likely to have two defining categories of need within the 'toxic trio' than three, and only make up marginally more cases than the second highest occurring class. These findings suggest that a combination of the 'toxic trio' factors was neither common nor overwhelmingly aligned with operational definitions of significant harm.

For a number of years, academics, professionals and service user groups have expressed concern about the increasing prevalence of 'toxic trio' terminology in contemporary CP discourse (Featherstone *et al.*, 2014). A recent systematic review (Skinner *et al.*, 2021) has questioned the evidence base behind the concept, while Morris *et al.* (2018) have argued that its popularity owes more to the 'notion of toxicity rather than knowledge of the specific harms' (2018: 368). Peter Sidebotham, who co-authored the meta-analysis of serious case reviews (SCRs) in which the term was originally employed (Brandon *et al.*, 2008), has acknowledged the problems with the way it has subsequently been used: 'as a label it is deeply stigmatising and does not help in appraising the real nature of any family dynamics, and of any support or protection needed for the child or family' (Sidebotham, 2019). A more recent SCR review has preferred the term 'cumulative risk of harm' (Sidebotham *et al.*, 2016), which encourages practitioners to consider the full range of risks in the family and wider social environment rather than focusing exclusively on three principal factors. The results reported here would support that view and show that the evidence is there to reach a more evidence-informed picture of demand.

The NCB's Family Research Advisory Group considered that the findings offered a useful guide to the reasons why families come to the attention of statutory services. The group expressed concern, when reflecting on the rationale for the research, that there had been such limited exploration to date of which families receive interventions and why. It was thought important that these insights are available to the wider community so that local groups and services can develop a response. Such community-based support is particularly important for disadvantaged families, since more affluent and educated parents are better equipped to obtain resources for their children and to avoid intrusive interventions. The group also thought that, by espousing more detailed consideration of why support may be needed, the findings could present an opportunity to address the wider social problems experienced by families. Members gave examples such as the challenge of access to transport for poor rural families as well as concerns about safety in urban neighbourhoods. The group was keen for data to be used to design services that could prevent the need for so many CP interventions, rather than to target more people for intervention.

From a service planning and design perspective, demand typologies offer an opportunity to connect administrative data with both lay and professional understandings of the needs of children, local knowledge of neighbourhoods and communities, and awareness of how the socio-economic circumstances of families impacts children's welfare and well-being. The current system in CSC is geared towards individual assessment and casework, which lends itself to a focus on risk factors at the level of parent and child and arguably to an understanding of demand that is detached from the social and economic drivers of health and well-being. In contrast, demand typologies offer a systematic way to combine risk factors with child characteristics and other variables to produce evidence about specific child welfare problems that can be examined in their own right and with a view to strategic prevention. Herman Goldstein's ideas about 'problem-oriented policing' offer a useful foundation for this type of analysis (Goldstein, 1979). In his preface to Scott (2000), Goldstein explains the importance of focusing on problems when it comes to preventing harm:

Problem-oriented policing recognizes, at the outset, that police are expected to deal with an incredibly broad range of diverse community problems – not simply crime. It recognizes that the ultimate goal of the police is not simply to enforce the law, but to deal with problems effectively – ideally, by preventing them from occurring in the first place. It therefore plunges the police into an in-depth study of the specific problems they confront. It invites consideration of a wide range of alternatives, in addition to criminal law, for responding to each specific problem. Thus, problem-oriented policing draws the police away from the traditional preoccupation with creating an efficient organization; from the heavy investment in standard, generic operating procedures for responding to calls and preventing crime; and from heavy dependence on criminal law as the primary means for getting their job done. (Scott, 2000: v)

Although this quote is about policing and crime prevention, the parallels with the current system in CSC will be obvious to most practitioners and managers. Sparrow (2008) has developed Goldstein's ideas into a framework for what he terms 'social regulation', which broadly means activity geared towards controlling risks to society in areas such as health, safety, welfare and the environment. In this respect, child safeguarding—like policing—encompasses a broad range of social problems that take a distinctive form within the communities served by CSC. Such problems may not be covered adequately by standard operating procedures, which are based on a 'screen and intervene' approach. Community problems reflect not only commonly experienced adversities and vulnerabilities but also those features of the social environment, including deprivation and inequality, which mean such difficulties are systematically experienced. Some of these problems may be already well

known to communities and agencies, as with the exploitation of vulnerable young people in 'county lines' drugs crime (Williams and Finlay, 2019), whereas others may be relatively hidden until they are exposed by public scandals, as with child sexual exploitation (Jay, 2014). While it will always be necessary to assess risk and coordinate care plans on a case-by-case basis, it makes sense for such activities to form part of a strategy to address significant problems 'as a coherent whole' (Sparrow, 2008: 97).

Several decades of research into problem-based policing and its offshoots in other fields has highlighted the value of multi-agency taskforces to design and experiment with tailored solutions to specific regulatory issues (Scott, 2000; Sparrow, 2008). In CSC, the infrastructure for multi-agency collaboration—safeguarding boards, risk assessment panels, teams around the child, and so on—have long existed. Moreover, the development of partnerships and strategies to tackle child criminal and sexual exploitation show that it is possible to improve upon the conventional reliance on thresholds, gatekeeping, and assessment/investigation. The core of child safeguarding work, including the problematic intersection between poverty and neglect, is equally in need of tailored solutions as opposed to funnelling demand through standardised processes. Sparrow (2008) suggests that such solutions are found in the mid-range between individual cases and the overall population covered by the service. For example, rural areas are more sparsely populated, more affluent and demographically older than urban areas (LGA, 2017). This means that child poverty and social exclusion have distinct characteristics in rural areas (Glass *et al.*, 2020), which in turn has implications for how child welfare services are designed and delivered. Individual risk assessment and casework should therefore be seen as part of broader strategic initiatives to tackle distinct problems in their local, regional and national context. The evidence presented in this paper shows that LAs' administrative data could play a key role in supporting a more strategic analysis of demand, defining such problems more accurately and supporting the development of tailored operational solutions.

Conclusion

This article has outlined the results of a latent class analysis of demand for CSC services based on the needs identified in social work assessments. Evidence was found for typologies of demand that were consistent across the sample of six LAs and could be profiled in terms of child characteristics. Further work with a larger sample of LAs, or a national dataset, would be necessary to verify and refine these typologies. The results suggest the limitations of the 'toxic trio' approach to conceptualising demand via a limited set of parental risk factors, which is not only stigmatising in

tone but also downplays the importance of other contextual issues and seems to misrepresent the variety of operational decisions made by child welfare professionals. The findings also support the use of administrative data to investigate the underlying child welfare problems that are responsible for the flow of work to the front door of services. Most of these problems will require not only targeted intervention to safeguard individual children but also engagement with stakeholders and communities to develop tailored multi-agency solutions. The current financial and economic climate for CSC puts a premium on the effective use of data for this purpose, and hopefully this study will encourage and reinforce such efforts.

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