Measuring health vulnerabilities

Technical Paper 5 in Children's Commissioner project on vulnerable children

Aldaba

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Contents

Aim

Aldaba ('we') was tasked by the Children's Commissioner Office ('the Commissioner') to review the information available in the public domain in relation to the health of vulnerable children ('the review').[1]

The scope included England in 2016, or the most recent year available in the information sources. Figure 1, below, shows the distribution of all under-18s living in England in 2015, by age.

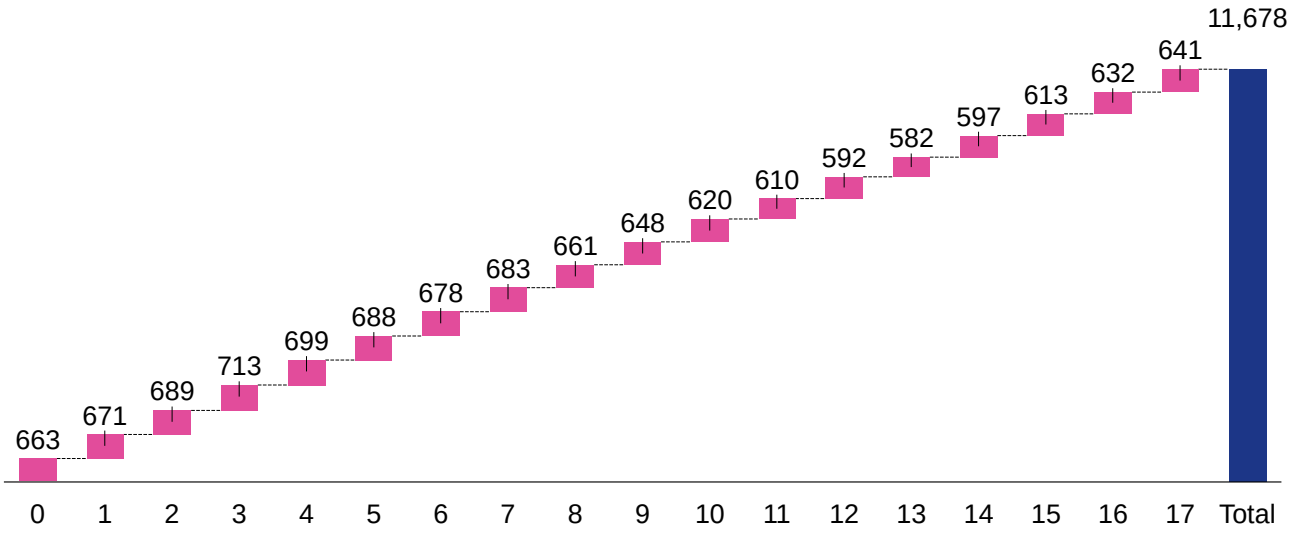
The Commissioner provided a list of 32 groups of vulnerable children, which is included in Table 1, below. The three health related groups were:

- Group 9: Children with special educational needs and disabilities
- Group 10: Children with mental health difficulties
- Group 11: Children with physical health issues

The aim of our review was to take stock of the quantitative estimates of:

1. prevalence: numbers of children in groups 9, 10 and 11; and
2. outcomes: likelihood of children in all 32 groups experiencing health related vulnerabilities.

Figure 1 People aged 0 to 17 living in England in 2015 (thousands)



Source: Office for National Statistics, 2015 mid-year population estimates, https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesanalysistool

[1] Aldaba's website: www.aldaba.co.uk

Table 1 Vulnerable groups

Safeguarding concerns or in local authority care	
1	Children looked after/looked after children
2	Children who are subject to child protection plans.
3	Children in a secure detention estate
4	Children in Need
5	Unaccompanied asylum seeking children
6	Care leavers
7	Children who are subject to a special guardianship order
8	Adopted children
Child's health and disability	
9	Children who have special educational needs and/or disability (SEND)
10	Children who have mental health difficulties
11	Children who have physical health issues
Economic circumstances	
12	Children in poverty
13	Children in low-income families
14	Children who are homeless or who are in insecure/unstable housing
Family circumstances and characteristics	
15	Pre Section 17 (no. 3C)
16	Teenage parents
17	Children in non-intact families
18	Young carers
19	Undocumented children and children without legal identity/regular immigration status
20	Children in 'troubled families'
21	Children whose parents use substances problematically
22	Children whose parents may have limited parenting capacity

Child's educational engagement	
23	NEET/pre-NEET children
24	Excluded pupils, and those at risk of exclusion
Child's involvement in offending or anti-social behaviour	
25	Children involved with the criminal justice system/young offenders
26	Young people who are involved in gangs
Childhood experience of abuse or exploitation	
27	Children who have childhood experienced trauma and abuse
28	Children who have been victims of modern slavery or trafficking
Missing and absent children	
29	Missing children
30	Absent children
Minority populations	
31	Children from black and minority ethnic (BME) backgrounds
32	Children who are in a gender minority and Children who are lesbian, gay or bisexual (LGB)

Source: Children's Commissioner Office

Method

Identification of sources

The first step we took was to access internet sources that bring together quantitative estimates relevant to health, for example Public Health's National Child and Maternal Health Intelligence Network: http://www.chimat.org.uk/

The second step was to request six academic experts to provide references to sources and names of other experts who could help identify further sources. We received feedback from a total of 12 academic experts.

As a result of steps one and two, we identified over 40 sources, including official statistics, and peer reviewed, and grey literature.

Draft quantitative estimates

The third step was to extract from the sources the quantitative estimates that were relevant to the scope. This resulted in over 600 quantitative estimates, for example 'number of pupils

with special educational needs' or 'number of regular smokers aged 11 to 15'. We coded the estimates in a Microsoft Excel spreadsheet based on relevance, type of health, and vulnerability group.

Final quantitative estimates

The fourth step was to review the coding and ensure alignment with the final list of 32 vulnerability groups provided by the Commissioner. This included identifying highly relevant estimates and discarding duplicates.

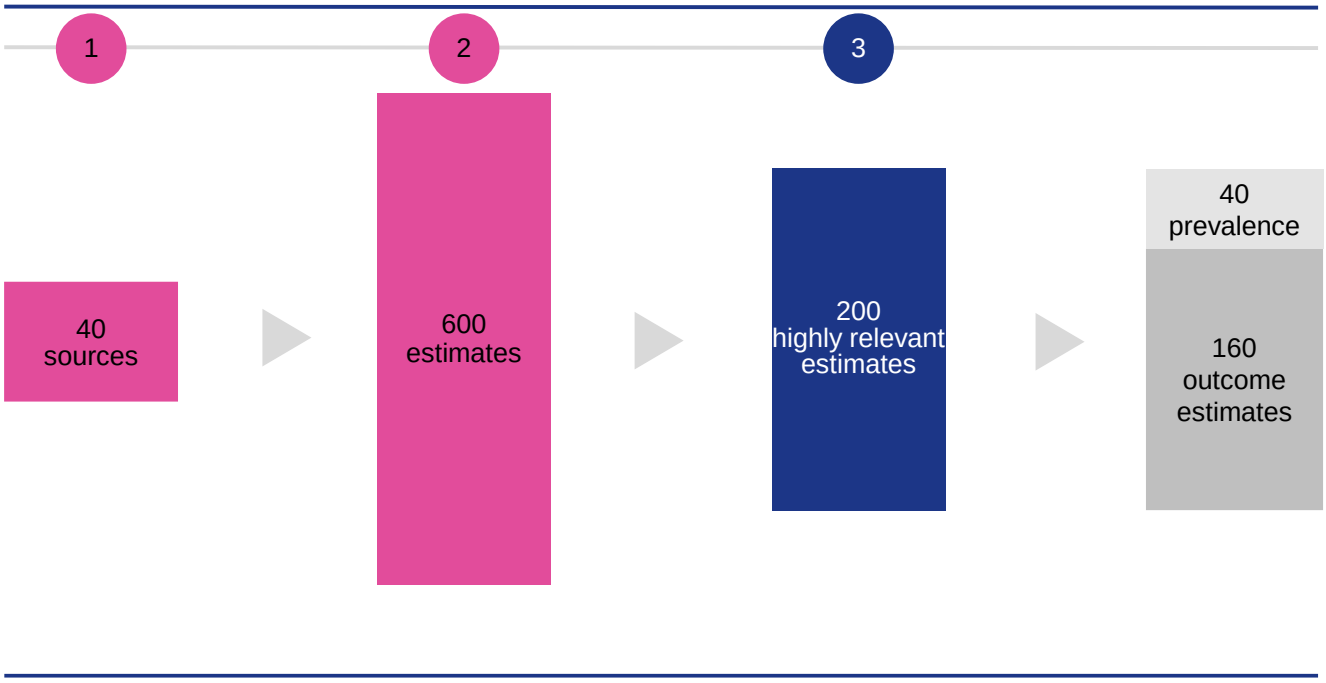
Characteristics of a highly relevant estimate include:

- High level: for example, a prevalence estimate for drug taking among 10 to 17 year olds is highly relevant for the purpose of this review, whereas estimates of particular drugs taken at particular ages are not.
- Representative of the population of England.
- In the case of outcome estimates: statistically significant.

As set out in Figure 2, below, we selected over 200 estimates which are highly relevant: approximately 40 are prevalence estimates, and the remaining 160 are outcome estimates.

The fifth step was to review the quantitative estimates. Where the information available was unclear, we accessed alternative sources, including original sources on which those in step one draw, for example, Office for National Statistics sources.

Figure 2 Selection of estimates



Source: Aldaba

Limitations

Our research was constrained by time and resources. As a result, our methodology did not comply with the requirements of a systematic review of evidence.[2] Critically, the approach to identifying sources was unstructured, and based on largely unplanned decisions taken in dialogue with the Commissioner as the research developed. The fact that we were unable to find certain estimates does not mean that these estimates do not exist.

Interpretation

The remainder of this report provides estimates that we coded as highly relevant. We reported the estimates in the following way:

- Where the estimate is reported as a fact, for example, 'there were 'x' number of children', or 'the number of children was 'x'', this is because the source for the estimate meets the requirements of national statistics.
- Where the estimate is reported as ours, for example, 'our estimate for…' or 'we estimated that…', this is because we performed some basic calculation based on the information provided in the original source. Where we applied a percentage reported in the original source to the overall population, we did this based on population estimates for 2015, and reported the estimate as a 2015 estimate, regardless of the year to which the original source refers.
- Where the estimate is not reported as ours, for example, 'it was estimated that…', this is because the estimate is reported as in the original source, without including any calculation made by us.

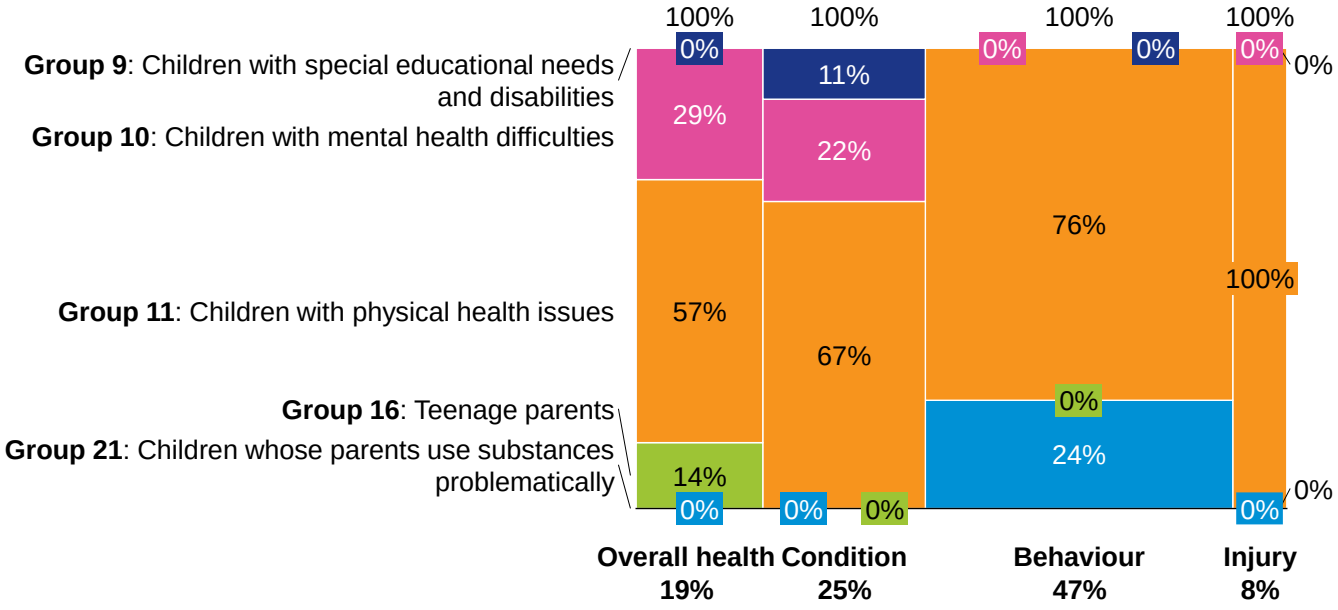
[2] Civil Service, Rapid Evidence Assessment Toolkit, http://webarchive.nationalarchives.gov.uk/20140305122816/http://www.civilservice.gov.uk/networks/gsr/resources-and-guidance/rapid-evidence-assessment

Prevalence

Out of the approximately 200 highly relevant estimates, we identified approximately 40 which referred to prevalence. As set out in Figure 3, below, most of the prevalence estimates were for the three health related groups: 9, 10, and 11. We also included a small number of estimates for groups 16 and 21, which were not the focus of our review, but appeared in our searches.

Across all groups, approximately half of the prevalence estimates were in relation to behaviours, such as smoking cigarettes and drinking alcohol; 25 per cent referred to health conditions, such as diagnosed illnesses; and 19 per cent were in relation to overall health, such as unhealthy weight.

Figure 3 Prevalence estimates by vulnerable group and type of health vulnerability



Note: n = 36 highly relevant estimates of prevalence
Source: Aldaba

Group 9: Children with special educational needs and disabilities

[1]

In 2016, there were 1,228,785 pupils with special educational needs, most of them aged under 19.[3] This includes all types of schools, and pupils with and without special educational needs statements, or education healthcare plans. Special educational needs and disabilities can affect children's:

- behaviour or ability to socialise, for example they struggle to make friends;

[3] The number in square brackets provides the identification number in Table 3, and Table 4, below, which are available in the reference section, and includes the name of the source, and a hyperlink to the source website.

- reading and writing, for example because they have dyslexia;
- ability to understand things;
- concentration levels; and
- physical ability.

Group 10: Children with mental health difficulties

[2]

Our estimate for those aged 0 to 17 in need of tier 1 to 3 child and adolescent mental health services (CAMHS) in 2014 is 2,773,460. Tiers 1 to 3 include universal services, such as those provided by general medical practices and schools, and specialist services; and exclude highly specialised inpatient services. Our 2014 estimate builds on survey information collected in 2004. Updated survey information is expected to be published in 2018.

[3]

We estimate that 13.7 per cent of the people aged 15, or 83,937, reported having low mental health satisfaction in 2015. This is based on the answers to one of the questions in the What About YOUth survey: 'Overall, how satisfied are you with your life nowadays, where 0 is 'not at all satisfied' and 10 is 'completely satisfied'?'[4]

In contrast to the estimates for those with mental health needs, the estimates for those accessing support are as follows:

[4]

In 2014, the number of referrals to psychological therapies for 15 to 19 year olds was 51,000. Note the same individual may have more than one referral.

[5]

In 2016, 10,028 people aged 10 to 17 were admitted to hospital for mental health conditions.

Group 11: Children with physical health issues: overall health

[6]

In 2015, there were 16,748 live births with a recorded birth weight below 2,500 grams, which is considered unhealthy. This is for those births with a gestational age of at least 37 complete weeks.

[4] What about YOUTH?, http://www.whataboutyouth.com/

[7-8]

We estimate that 23 per cent of those aged 4, or 160,814, and 35 per cent of those aged 10, or 217,026, had an unhealthy weight, including overweight, obesity, and underweight, in 2015.

[9]

Our estimate for those aged 5 who had obvious tooth decay in 2015 is 31 per cent, or 213,159.

Group 11: Children with physical health issues: conditions

[10-11]

In 2011, 206,400 people aged 0 to 19 were estimated to have their day to day activities limited a lot by a health problem or disability. In addition, 305,100 were estimated to have their day to day activities limited a little by a health problem or disability.

[12]

In 2015, our estimate for those aged 15 who had a long term illness, disability or medical condition diagnosed by a doctor was 14.1 per cent, or 86,387.

Some of the most frequent conditions include the following:

[13]

In 2015, there were 40,491 unplanned hospitalisations for asthma, diabetes and epilepsy in under 19s.

[14]

In 2015, there were 45,148 emergency admissions for people aged 0 to 18 with lower respiratory tract infections.

[15]

In 2015, there were 129,022 chlamydia detections for people aged 15 to 24.

Group 11: Children with physical health issues: behaviours

[16]

In 2015, our estimate for those aged 15 who had three or more risky behaviours was 15.9 per cent, or 97,415. The full list of risky behaviours is: smoking, drinking alcohol, using cannabis, using other drug, unhealthy diet, and poor physical activity levels.

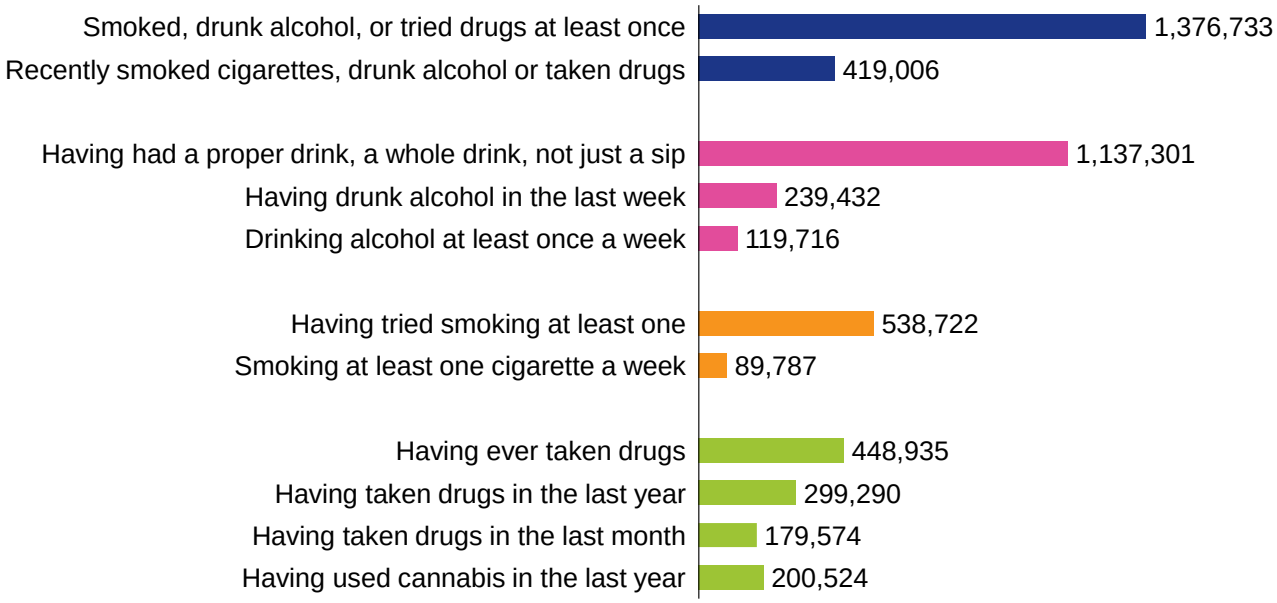
[17-27]

As set out in Figure 4, below, our estimate for pupils aged 11 to 15 who reported having smoked, drunk alcohol, or tried drugs on at least one occasion was 38 per cent, or 1,376,733, in 2015. Of these, we estimate that 419,006 had smoked in the last week, drunk alcohol in the last week, or taken drugs in the last month.

[28]

In 2015, there were 12,637 alcohol related hospital admissions for people aged 0 to 17.

Figure 4 Prevalence of behaviours among pupils aged 11 to 15 in 2015



Source: NHS Digital, Smoking, drinking and drug use among young people in England in 2014, http://content.digital.nhs.uk/catalogue/PUB17879/smok-drin-drug-youn-peop-eng-2014-rep.pdf

Group 11: Children with physical health issues: injury

[29-30]

In 2016, there were 102,036 hospital admissions caused by unintentional and deliberate injuries in people aged 0 to 14. Of these, 44,524 were aged 0 to 4.

[31]

In 2016, there were 42,643 hospital admissions as a result of self harm among people aged 10 to 24. Self harm may include self poisoning by exposure to alcohol, handgun discharge, jumping from a high place, or crashing of motor vehicle, among others.

Other vulnerable groups

[32]

Our estimate for the number of conceptions for 15 to 17 year old females in 2015 is 21.2 per 1,000, or 19,462.

[33]

In 2016, the number of mothers of all ages who were recorded as smokers at the time of delivery was 67,195.

[34]

In 2015, the number of children aged 0 to 12 looked after by a smoker for more than two hours per week was estimated to be 602,990.

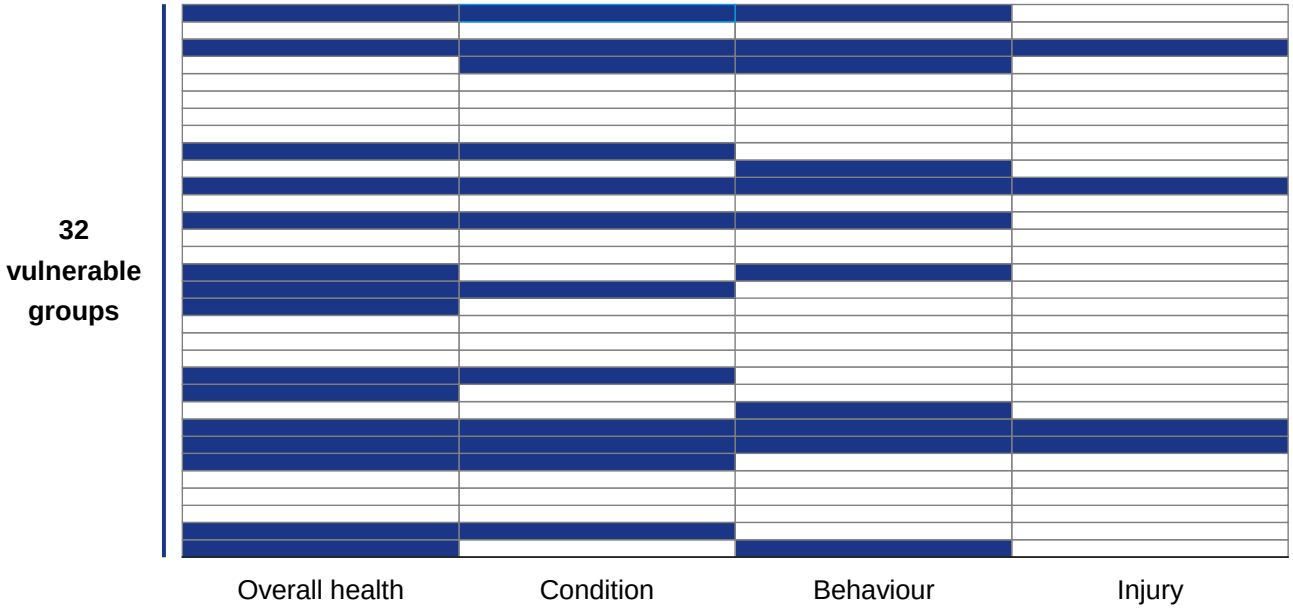
[35-36]

In 2015, we estimate that 110.4 per 100,000, or 11,487 people aged 0 to 15 had parents in drug treatment. The equivalent estimate for alcohol treatment was 147.2 per 100,000, or 15,316.

Outcomes

Out of the approximately 200 highly relevant estimates, we identified approximately 160 which referred to outcomes. Figure 5, below, shows highlighted in blue the 18 groups for which we identified outcomes.

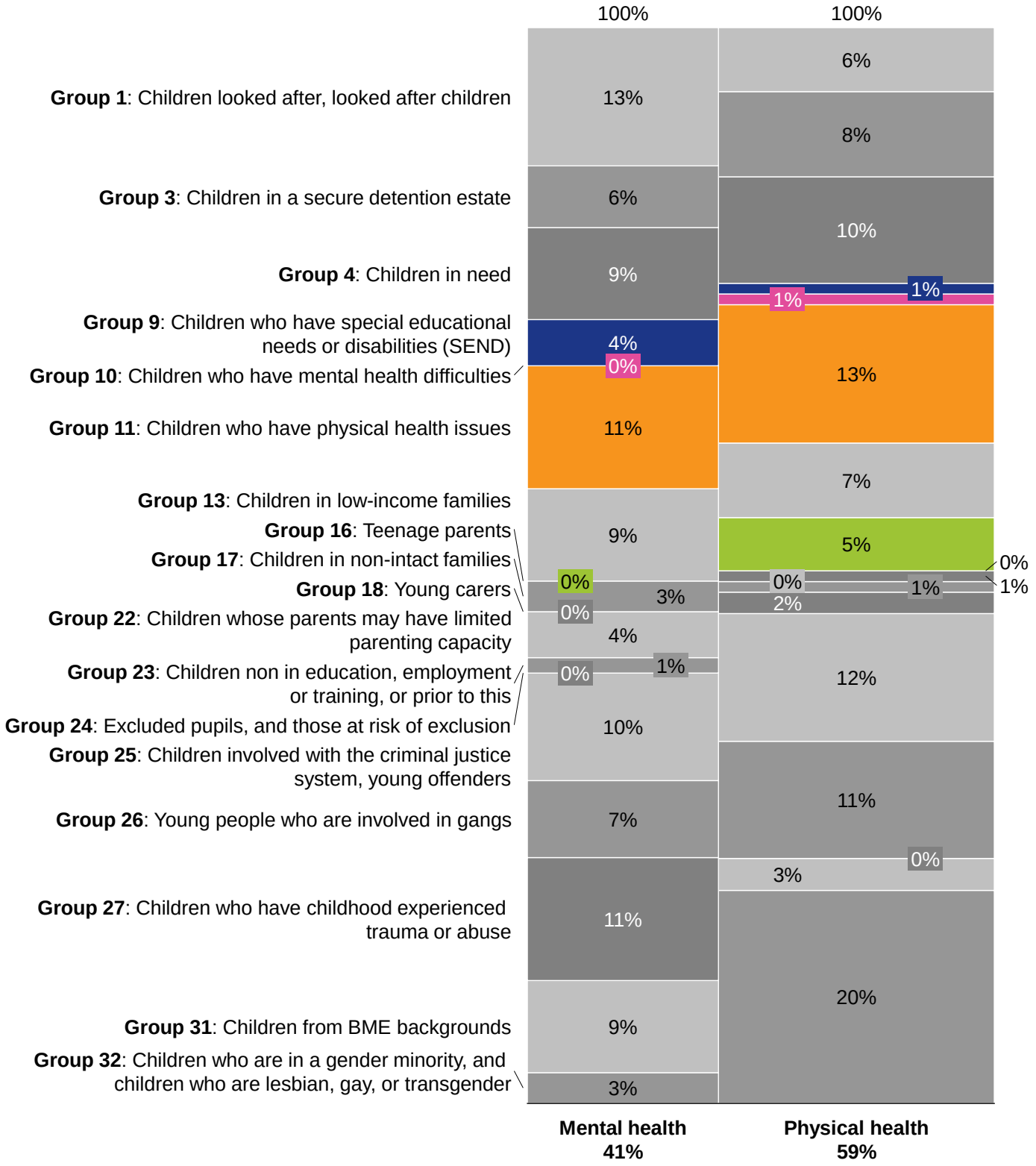
Figure 5 Outcome estimates identified for the 32 vulnerable groups



Note: n = 171 highly relevant estimates of outcomes
Source: Aldaba

In Figure 6, and Figure 7, below, we provide further details about these 18 groups. Approximately 80 per cent of the outcome estimates were in relation to overall health and conditions.

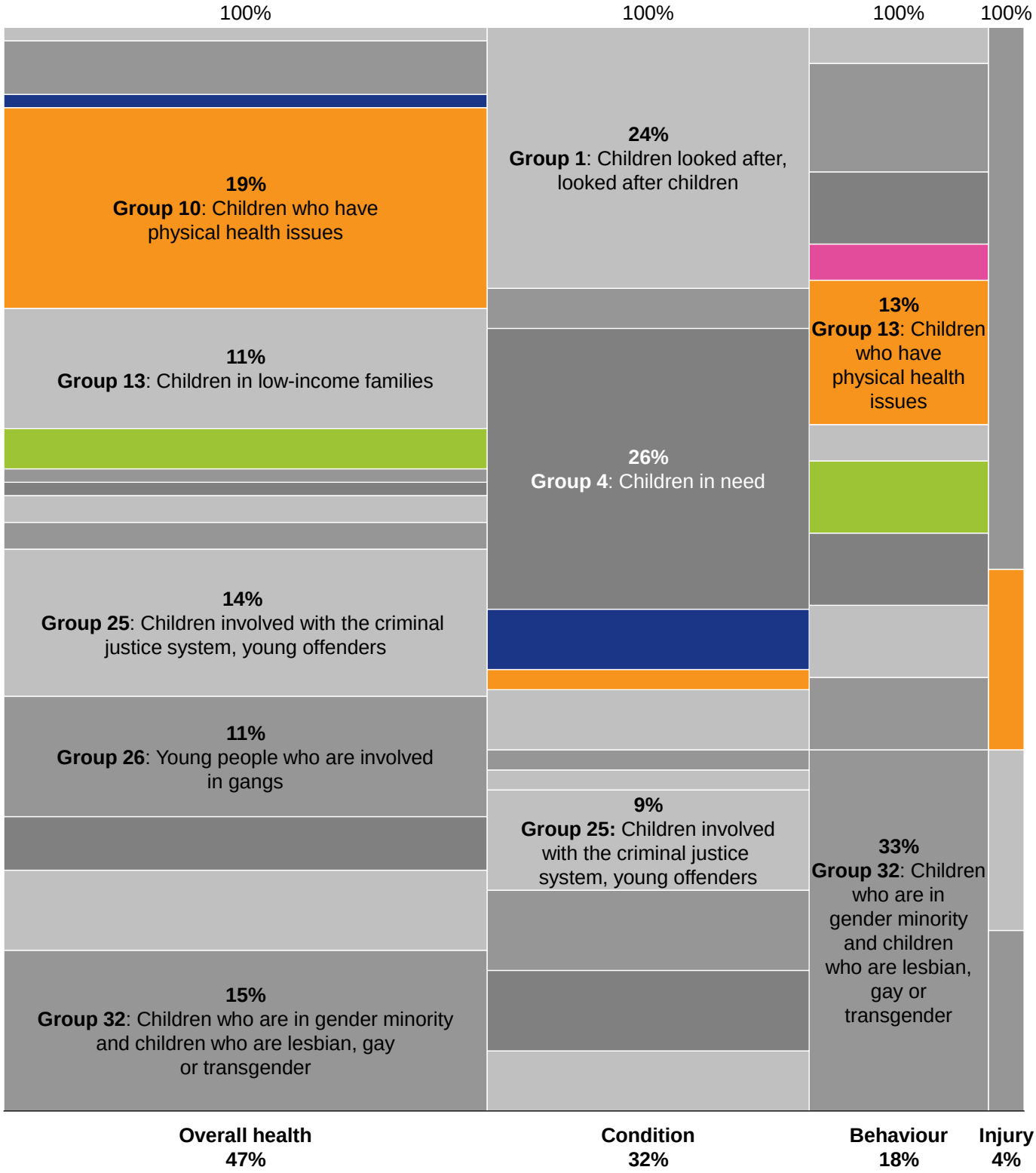
Figure 6 Outcome estimates by vulnerable group and type of health



Note: n = 171 highly relevant estimates of outcomes

Source: Aldaba

Figure 7 Outcome estimates by vulnerable group and type of health vulnerability



Note: n = 171 highly relevant estimates of outcomes; only those above 8 per cent are labelled

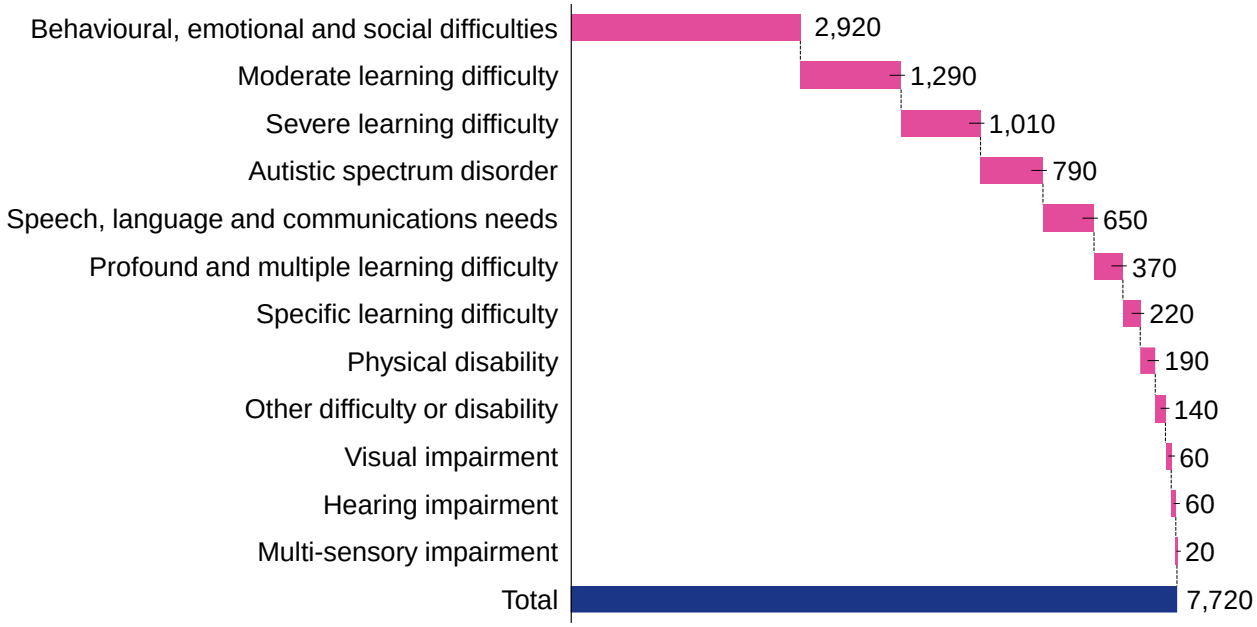
Source: Aldaba

Group 1: Children looked after

[37-49]

In 2015, there were 21,070 looked after children who had a special educational need, including both those with and without special educational need statement, or education healthcare plan. Of these, 7,720 had been looked after continuously for at least 12 months and had special educational need statements, or education healthcare plans. Most of them were aged under 19. Figure 8, below, sets out specific types of special educational needs for this group.

Figure 8 Children looked after with special educational needs



Source: Department for Education, Outcomes for children looked after by LAs, https://www.gov.uk/government/statistics/outcomes-for-children-looked-after-by-las-31-march-2015

[50]

We estimate that the emotional and behavioural health of 17,375 looked after children, most of them aged under 19, was borderline or cause for concern in 2016, as measured by the strengths and difficulties questionnaire (SDQ).[5]

[51]

In 2016, there were 1,850 children who had been looked after continuously for at least 12 months, were mostly aged under 19, and were known to have substance misuse problems.

[5] Youth in Mind, SDQ, http://www.sdqinfo.org/

Group 3: Children in a secure detention estate

[52]

In 2003, it was estimated that the suicide rate for boys aged 15 to 17 sentenced and remanded in custody was 18 times higher compared to the general population in England and Wales.

[53]

In 2012, there were three deaths of young people (unspecified age) in custody.

[54]

In 2006, it was estimated that 60 per cent of boys in custody (unspecified age) had specific difficulties in relation to speech language or communication.

[55-57]

In 2006, it was estimated that of all 13 to 18 year olds in custody: 10 per cent had depression, 9 per cent had anxiety, and 5 per cent had post-traumatic stress disorder.

[58-60]

In 2012, 72 per cent of incarcerated male young offenders (unspecified age) reported suffering at least one traumatic brain injury of any severity; 41 per cent reported experiencing a loss of consciousness; and 46 per cent reported having more than one injury.

[61-63]

In 2004, of those children and young people (unspecified age) who were due to enter custody 80 per cent disclosed problematic or risky substance misuse, 67 per cent had got drunk the week before, and 16 per cent had got drunk every day.

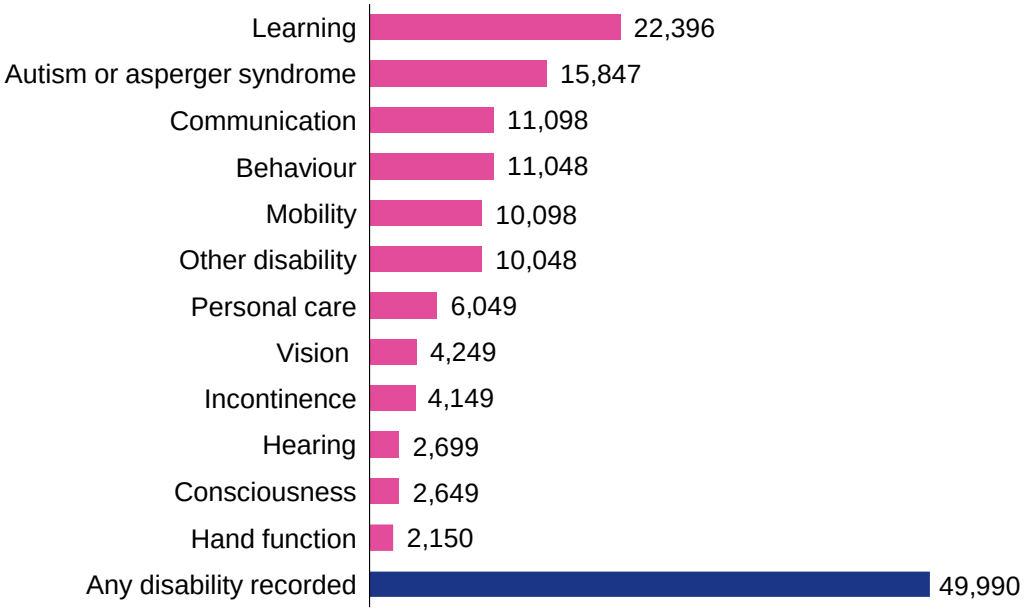
Group 4: Children in need

When a child is referred to children's social care at a local council, an assessment is carried out to identify if the child is in need of services or protection, including family support, leaving care support, adoption support, or disabled children's services. Children in need are those who are assessed as in need of support under Section 17 of the Children Act 1989.

[64-76]

In 2016, there were 49,990 children in need with a recorded disability, most of them aged under 19. Figure 9, below, provides a breakdown by type of recorded disability. Please note that one individual may have more than one specific type of disability.

Figure 9 Children in need with a recorded disability in 2016



Source: Department for Education, Characteristics of children in need, https://www.gov.uk/government/statistics/characteristics-of-children-in-need-2015-to-2016

[77]

In 2016, our estimate for children in need with mental health as a factor included in their assessment was 144,350.

[78-79]

In 2016, our estimate for children in need with alcohol misuse as a factor included in their assessments was 72,570. This is based on the fact that 18.4 per cent of all episodes related to children in need included alcohol misuse as a factor. Note that one single child in need may have more than one episode each year. Similarly, our estimate for children in need with drug misuse as a factor was 76,119.

Group 9: Children who have special educational needs

[80]

In 2011, the odds ratio of children with intellectual disabilities being obese at age 11 was estimated to be 1.68. Our interpretation of this is that children with intellectual disabilities

were more likely to be obese than those without intellectual disabilities. Obesity was estimated to be further associated with maternal obesity, maternal education, child ethnicity, and being bullied at age 5.

[81]

In 2011, the mental illness regression coefficient for children's cognitive ability at age 11 was estimated to be -0.07, as measured by the emotional symptoms and conduct problems subscales of the strengths and difficulties questionnaire. We interpret this as a decrease in the likelihood of experiencing mental illness as cognitive ability increases.

[82-83]

In 2011, the mental illness regression coefficient for children with special educational needs at age 11 was estimated to be 0.13, as measured by the emotional symptoms and conduct problems subscales of the strengths and difficulties questionnaire. This means that those with special educational needs had an increased likelihood of experiencing mental illness. Similarly, the mental illness regression coefficient for children with communication difficulties at age 11 was 0.19.

Group 10: Children with mental health difficulties

[84]

In 2008, the odds ratio of having a first alcohol related emergency readmission for those aged 12 to 18 who had a comorbid mental health diagnosis was estimated to be 1.55. This is based on a follow-up period of over three years after the first admission. It means that those with a comorbid mental health diagnosis were more likely to be readmitted to emergency services, once they have a first alcohol related admission, than those without a diagnosis. A comorbid diagnosis involves more than one disorder occurring simultaneously.

Group 11: Children with physical health issues: overall health, self harm and deaths

[85]

In 2015, the number of infant deaths under one year were 2,575.

[86-87]

In 2015, our estimate of deaths of children aged one to nine years was 12.2 per 100,000, or 748. In the case of those aged 10 to 19, our estimate is 16.7 per 100,000, or 1,038.

[88]

In 2016, the number of child death reviews which were assessed as having modifiable factors was 863.

[89]

It is estimated that in 2010, 27 per cent of self harm victims aged 10 to 18 repeated self harm. This may include self poisoning by exposure to alcohol, handgun discharge, jumping from a high place, or crashing of motor vehicle, among others.

[90]

In 2015, our estimate of deaths as a result of self harm among 15 to 19 year olds was 43.9 per million, or 141.

[91]

In 2014, our estimate of children aged 0 to 14 not surviving five years following a diagnosis of cancer is 267.

[92]

In 2015, there were 847 car drivers or passengers aged 17 to 19 reported killed or seriously injured.

Group 11: Children with physical health issues: overall health, mental health

[93-100]

In 2011, the regression coefficient associated with emotional symptoms of children aged 11 whose body mass index trajectory increased rapidly was estimated to be 0.53. This is in comparison to those whose body mass index trajectory remained stable. Our interpretation is that those with increasing body mass index were more likely to experience emotional symptoms. Body mass index is derived from the weight and height of an individual. Figure 10, below, provides regression coefficients for other levels of overall health and types of behaviours.

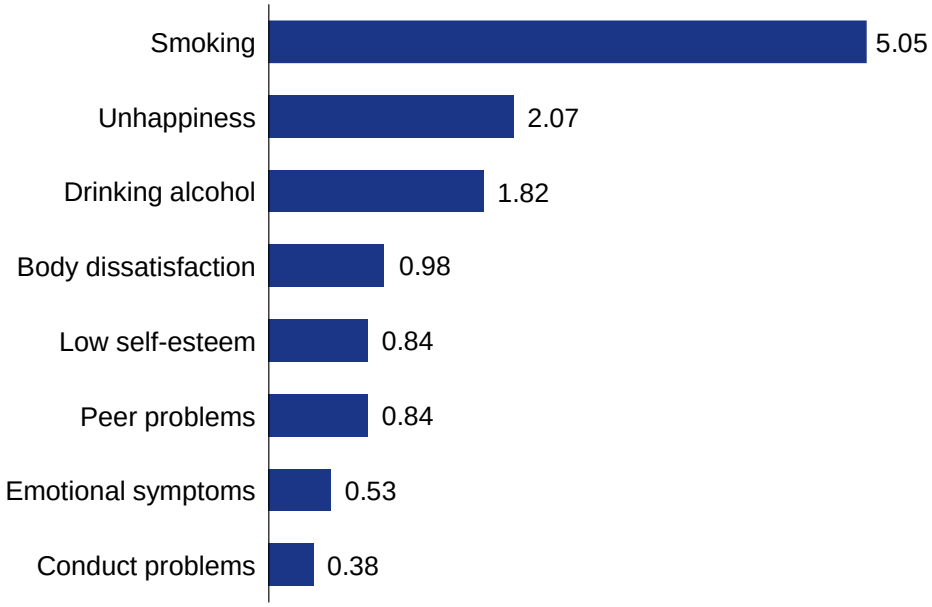
[101]

In 2011, the wellbeing regression coefficient for children who were overweight at age 11 was estimated to be -0.07. Our interpretation is that those who are overweight experienced relatively reduced levels of wellbeing. Wellbeing was assessed using a measure developed for the youth survey of the British Household Panel Study in the 1990s. This questionnaire consists of indicators of 6 different aspects of wellbeing in domains that are appropriate to children, including school, family, friends, school work, appearance, and life as a whole.

[102]

In 2011, the mental illness regression coefficient for children with a chronic illness at age 11 was estimated to be 0.25. We interpret this as an increase in the likelihood of experiencing mental illness for those with chronic illnesses.

Figure 10 Regression coefficients for children aged 11 whose body mass index trajectory increases rapidly in 2011



Source: Kelly Y, et al. (2016) BMI Development and Early Adolescent Psychosocial Well-Being: UK Millennium Cohort Study, Pediatrics, http://childofourtimeblog.org.uk/wp-content/uploads/2016/10/2016-10-06-Kelly-SLLS-BMI-trajectories-1.pdf

Group 11: Children with physical health issues: behaviours and injuries

[103-104]

In 2008, the odds ratio of having a first alcohol related emergency readmission for those aged 12 to 18 who had a diagnosis of self harm was estimated to be 1.37. Our interpretation is that those with a self harm diagnosis were more likely to be readmitted to emergency services, once they had a first alcohol related admission, than those without a diagnosis. This is based on a follow-up period of over three years after the first admission. In the case of those who had another substance use diagnosis, the odds ratio was estimated to be 1.35.

[105]

In 2013, those aged 10 to 24 were estimated to be 5.28 times more likely to have an injury admission to hospital if a previous alcohol specific admission had been registered. This is compared to those who do not have a previous alcohol specific admission, based on a follow-up period of one year after the first admission.

Group 13: Children in low income families: overall health, obesity

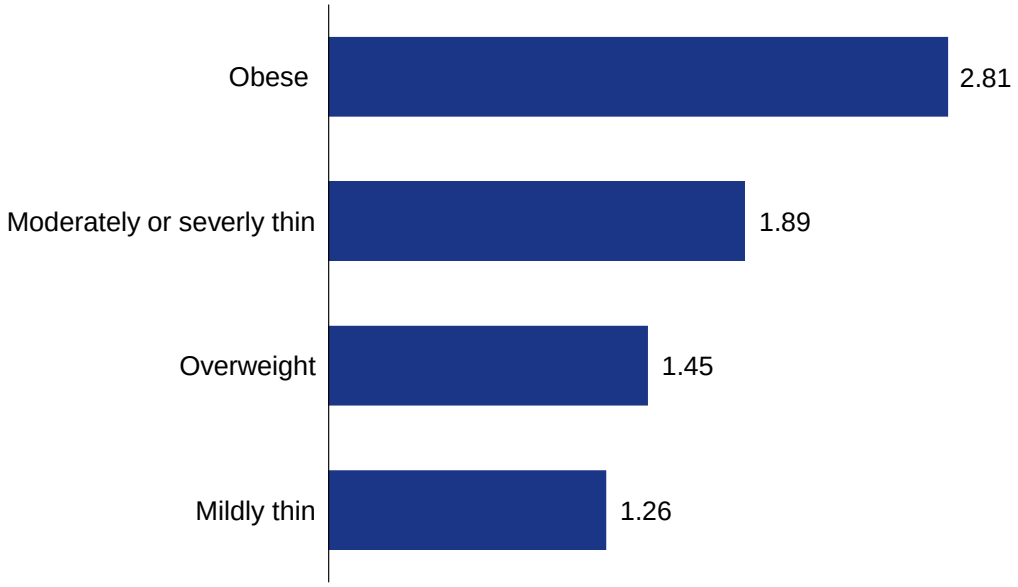
[106-107]

In 2005, the increased relative risk of being obese at age 5 if part of the bottom income quintile was estimated to be 2. For the same cohort, in 2011, the increased relative risk of being obese at age 11 was estimated to be 3. This is compared to children in the top income quintile. Our interpretation is that poorer children are more likely to be obese.

[108-111]

Figure 11, below, shows our estimates of the average relative risk rates for boys and girls aged 4 to 5 of experiencing different types of weights in relation to their index of multiple deprivation decile.

Figure 11 Average relative risk for boys and girls aged 4 to 5 in the most disadvantaged index of multiple deprivation decile



Source: Pearce, A., Rougeaux, E., Law, C., (2015) Disadvantaged children at greater relative risk of thinness (as well as obesity): a secondary data analysis of the England National Child Measurement Programme and the UK Millennium Cohort Study, International Journal for Equity in Health, https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-015-0187-6

Group 13: Children in low income families: overall health, mental health

[112-114]

In 2011, the wellbeing regression coefficient for children in the third income quintile (fifth being the highest income quintile) at age 11 was estimated to be -0.10. We interpret this as

a decrease in wellbeing as income increases. In the case of the forth income quintile, the regression coefficient was -0.09, and in the case of the fifth income quintile, this was -0.14.

[115-117]

In 2011, the mental illness regression coefficient for children in the third income quintile (fifth being the highest income quintile) at age 11 was estimated to be -0.12. We interpret this as a decrease in the likelihood of experiencing mental illness as income increases. In the case of the forth income quintile, the regression coefficient was -0.15, and in the case of the fifth income quintile, the regression coefficient was -0.19.

As explained by the researchers who produced the regression coefficients: 'Income predicted an expected gradient for [mental illness] symptoms, with higher income predicting lower symptoms. However, the opposite gradient was found for wellbeing, whereby belonging to higher-income groups was associated with lower wellbeing, a finding that is in contrast with wellbeing findings at other stages of life'.

Group 13: Children in low income families: behaviours

[118]

In 2008, the odds ratio of having a first alcohol related emergency readmission for those aged 12 to 18 who lived in a deprived area was estimated to be 0.923. This is based on a follow-up period of over three years after the first admission. Our interpretation is that those living in a deprived area were more likely to be readmitted to emergency services, once they had a first alcohol related admission, than those living in better off areas.

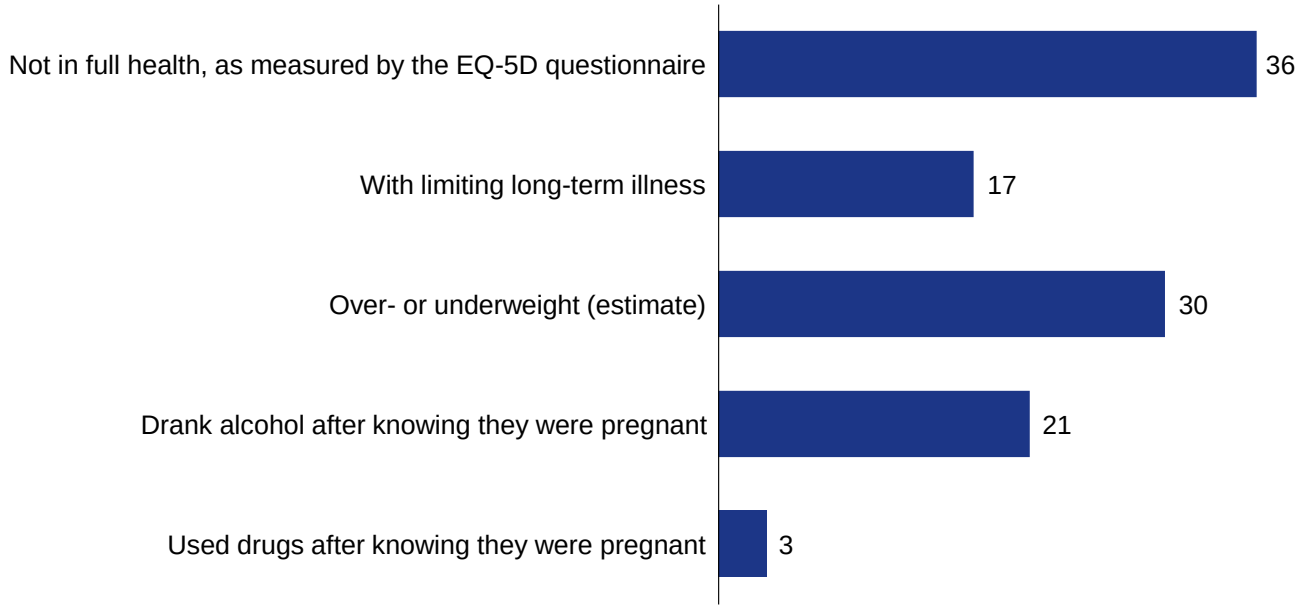
Group 16: Teenage parents

[119-123]

In 2010, it was estimated that the percentage of pregnant women aged 16 to 19 participating in the Family Nurse Partnership randomised controlled trial who were not in full health, as measured by the EQ-5D questionnaire[6], was 36.2. Figure 12, below, provides further estimates for this group. Note these estimates are not representative of the overall population in England.

[6] Euroquol, EQ-5D, http://www.euroqol.org/

Figure 12: Pregnant women aged 16 to 19 who participated in the Family Nurse Partnership randomised controlled trial in 2010 (percentage)



Source: Cardiff University, Building Blocks. A randomised controlled trial (RCT) to evaluate the Family Nurse Partnership in England, http://www.cardiff.ac.uk/__data/assets/pdf_file/0009/504729/Building-Blocks-Full-Study-Report.pdf

Group 17: Children in non intact families

[124-125]

In 2011, the mental illness regression coefficient for children in single parent families at age 11 was estimated to be 0.10. We interpret this as an increase in the likelihood of experiencing mental illness associated with single parent families. The equivalent measure for wellbeing was -0.08, which we interpret as a decrease in wellbeing levels in single parent families.

Group 18: Young carers

[126]

We estimate that in 2013 the number of carers aged 5 to 17 who provided 1 to 19 hours of care per week and were in 'not good health' was 7,709.

Group 22: Children whose parents may have limited parenting capacity

[127]

In 2011, the wellbeing regression between parents' life satisfaction and children's wellbeing at age 11 was estimated to be 0.03. We interpret this as an increase in children's wellbeing associated with parents' life satisfaction.

[128-129]

In 2011, the mental illness regression coefficient for children who argue with their parents at age 11 was estimated to be 0.56. We interpret this as an increase in the likelihood of experiencing mental illness associated with arguments. The equivalent measure for wellbeing is -0.05, which we interpret as a decrease in wellbeing levels for children who argue with their parents.

Group 23: Not in education, employment or training children, or prior to this

[130]

In 2005, the increased probability of those not in education, employment or training experiencing poor mental health, as measured by the General Health Questionnaire, was estimated to be 3 percentage points.[7]

[131]

In 2013, we estimated that 55.6 per cent of people aged 16 to 24 who were not employed or in education had mental wellbeing levels that were below the average of the whole population, as measured by Warwick-Edinburgh Mental Wellbeing Scales.[8]

Group 24: Excluded pupils, and those at risk of exclusion

[132-133]

In 2015, our estimate of pupils aged 11 to 15 who usually play truant, or have been excluded, reporting taking drugs once a month is 30,528. The equivalent estimate for taking class A drugs in the last year is 40,703.

[7] General Health Questionnaire, https://en.wikipedia.org/wiki/General_Health_Questionnaire
[8] Warwick Medical School, Warwick-Edinburgh Mental Wellbeing Scales, http://www2.warwick.ac.uk/fac/med/research/platform/wemwbs/

Group 25: Children involved with the criminal justice system, young offenders: overall health, self harm and deaths

[134]

It was estimated that 2 per cent of people (unspecified age) in the youth justice system had a diagnosable physical illness in 2011.

[135]

It was estimated that 2 per cent of people (unspecified age) in the youth justice system had dentistry problems in 2011.

[136]

In the case of eyesight problems, the percentage was 2.

[137]

And in the case of hearing problems, the percentage was 1.

[138]

It was estimated that 7 per cent of people (unspecified age) in the youth justice system had eating or sleeping problems.

[139]

It was estimated that 1 per cent of people (unspecified age) in the youth justice system had an acquired brain injury in 2011.

[140]

It was estimated that 4 per cent of people (unspecified age) in the youth justice system had sexual health problems in 2011.

[141]

It was estimated that 6 per cent of people (unspecified age) in the youth justice system were exposed to suicide or self harm risks in 2011.

[142]

In 2011, there were 20 young people who died in the community under youth offending team supervision as a result of murder, suicide or accidental death.

Group 25: Children involved with the criminal justice system, young offenders: overall health, mental health

[143]

It was estimated that 7 per cent of people (unspecified age) in the youth justice system had a learning disability in 2011.

[144]

In the case of developmental difficulties, our estimate is 3 per cent.

[145]

It was estimated that 4 per cent of people (unspecified age) in the youth justice system had speech and communications problems in 2011.

[146]

It was estimated that 9 per cent of people (unspecified age) in the youth justice system had a significant event affecting their wellbeing in 2011.

[147-148]

In 2009, the percentage of children and young people (unspecified age) on community orders who had emotional and mental health needs was estimated to be 43 per cent. In the case of boys with learning disabilities, the estimate was 25 per cent in 2004.

[149]

It was estimated that 9 per cent of people (unspecified age) in the youth justice system had a suspected mental health diagnosis in 2011.

[150]

It was estimated that 13 per cent of people (unspecified age) in the youth justice system had severe behavioural problems before the age of 12 in 2011.

Group 25: Children involved with the criminal justice system, young offenders: behaviours

[151-152]

It was estimated that 10 per cent of people (unspecified age) in the youth justice system exhibited alcohol misuse behaviours in 2011. In the case of drug misuse, our estimate is 15 per cent.

Group 26: Young people who are involved in gangs: overall health, self harm and deaths

[153]

We estimate that 3 per cent of boys and girls (unspecified age) in gangs had a diagnosable physical illness in 2011.

[154]

We estimate that 9 per cent of boys and girls (unspecified age) in gangs had dentistry problems in 2011.

[155]

In the case of eyesight problems, the percentage was 5.5.

[156]

And in the case of hearing problems, the percentage was 1.5.

[157]

We estimate that 28.5 per cent of boys and girls (unspecified age) in gangs had eating or sleeping problems.

[158]

We estimate that 1.5 per cent of boys and girls (unspecified age) in gangs had an acquired brain injury in 2011.

[159]

We estimate that 20 per cent of boys and girls (unspecified age) in gangs had sexual health problems in 2011.

[160]

We estimate that 20 per cent of boys and girls (unspecified age) in gangs were exposed to suicide or self harm risks in 2011.

Group 26: Young people who are involved in gangs: mental health

[161]

We estimate that 17.5 per cent of boys and girls (unspecified age) in gangs had a learning disability in 2011.

[162]

In the case of developmental difficulties, our estimate is 10.5 per cent.

[163]

We estimate that 7 per cent of boys and girls (unspecified age) in gangs had speech and communications problems in 2011.

[164]

We estimate that 24 per cent of boys and girls (unspecified age) in gangs had a significant event affecting their wellbeing in 2011.

[165]

We estimate that 25 per cent of boys and girls (unspecified age) in gangs had a suspected mental health diagnosis in 2011.

[166]

We estimate that 38.5 per cent of boys and girls (unspecified age) in gangs had severe behavioural problems before the age of 12 in 2011.

Group 26: Young people who are involved in gangs: behaviours

[167-168]

We estimate that 32 per cent of boys and girls (unspecified age) in gangs exhibited alcohol misuse behaviours in 2011. In the case of drug misuse, our estimate is 44.5 per cent.

Group 27: Children who have childhood experienced trauma and abuse

[169-170]

In 2011, the wellbeing regression coefficient for children who argue with their friends at age 11 was estimated to be -0.11. We interpret this as a decrease in wellbeing associated with having arguments. Similarly, the wellbeing regression coefficient for children bullied by their friends at age 11 was -0.25.

[171-172]

In 2011, the mental illness regression coefficient for children bullied by their siblings at age 11 was estimated to be 0.06. We interpret this as an increase in the likelihood of experiencing mental illness associated with bullying. The equivalent estimate for wellbeing was -0.06, which means that wellbeing levels are lower for those bullied by their siblings.

[173-174]

In 2011, the mental illness regression coefficient for children with peer problems at age 11 was estimated to be 0.36. We interpret this as an increase in the likelihood of experiencing mental illness associated with peer problems. The equivalent estimate for wellbeing was -0.08, which means that wellbeing levels are lower for those with peer problems.

[175-176]

In 2011, the t test statistic for experiencing trauma symptoms in relation to maltreatment by a parent or care giver in children aged under 11 was estimated to be 4.13. This means that those maltreated are more likely to experience trauma symptoms. The equivalent estimate for those aged 11 to 17 was 5.61.

Group 31: Children from black and minority ethnic (BME) backgrounds

[177-179]

In 2005, the odds ratios of Black Caribbean and Black African children being obese at age 5 were estimated to be 1.7 and 1.4 respectively, whereas that of Pakistani children was 0.6. We interpret this as Black Caribbean, and Black African children being more likely to be obese, whereas Pakistani children are less likely to be obese.

[180-182]

In 2011, the mental illness regression coefficient for children from Asian ethnic background at age 11 was estimated to be -0.12. We interpret this as a decrease in the likelihood of experiencing mental illness associated with this ethnic group. The equivalent estimates were -0.18 for Black ethnic background, and -0.21 for other ethnic backgrounds.

[183-185]

In 2011, the regression coefficients for the total difficulties score of Pakistani children at age 7 was estimated to be 2.43. We interpret this as a greater level of difficulties associated with this ethnic group. The equivalent estimate was 1.6 for Bangladeshi, and 1.71 for Black Caribbean children.

Group 32: Children who are in a gender minority and children who are lesbian, gay, and bisexual: overall health, self harm, and deaths

[186-187]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and ‘other’ people aged 16 to 25 whose health is fair, bad or very bad was estimated to be 27 per cent. ‘Other’ is for

people who do not consider themselves lesbian, gay, bisexual, questioning, transgender, or heterosexual. In the case of transgender people, the percentage was estimated to be 43.

[188-189]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and 'other' people aged 16 to 25 who reported having been diagnosed with chlamydia at least once was estimated to be 4. In the case of transgender people, the percentage was estimated to be 1.

[190-191]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and 'other' people aged 16 to 25 who reported having hurt themselves on purpose, also called self harm, in the past was estimate to be 39. In the case of transgender people, the percentage was estimated to be 47.

[192-193]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and 'other' people aged 16 to 25 who reported having tried to kill themselves, and really hoped to die, was estimated to be 10. In the case of transgender people, the percentage was estimated to be 17.

[194-195]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and 'other' people aged 16 to 25 who reported attempting suicide someday as likely was estimated to be 7. In the case of transgender people, the percentage was estimated to be 3.

Group 32: Children who are in a gender minority and children who are lesbian, gay, and bisexual: overall health, mental health

[196-197]

In 2013, the percentage of lesbian, gay, bisexual, questioning, and 'other' people aged 16 to 25 who reported feeling unhappy and depressed more than usual in the past few weeks was estimated to be 36. In the case of transgender people, the percentage was estimated to be 45.

Group 32: Children who are in a gender minority and children who are lesbian, gay, and bisexual: behaviours

[198-199]

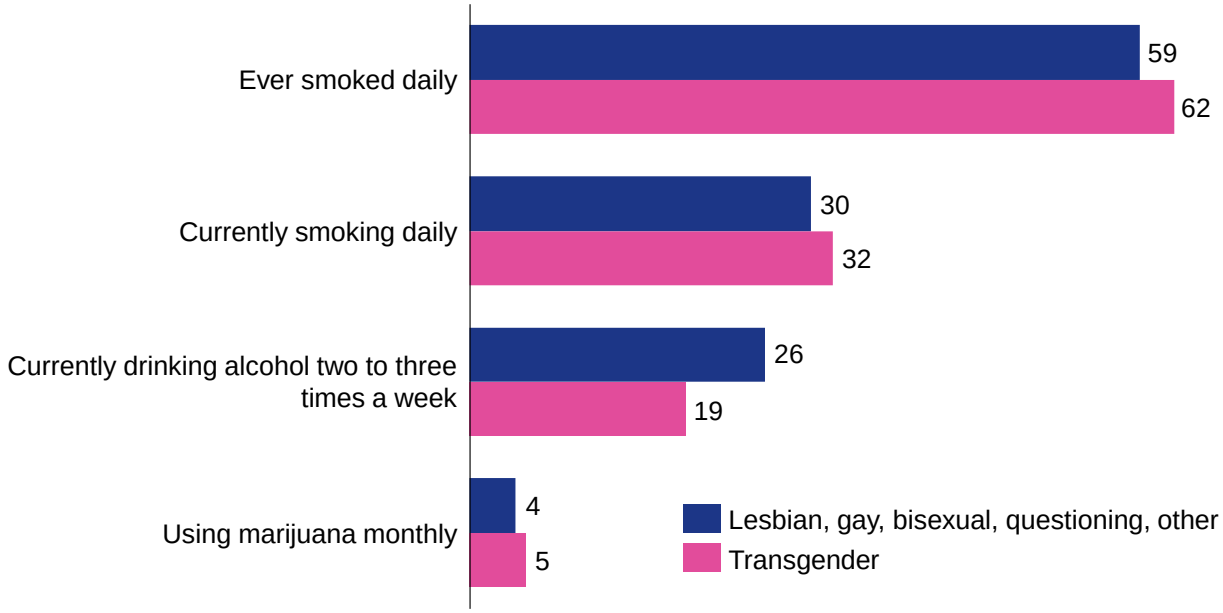
In 2011, the odds ratio of smoking for those 18 to 19 year olds who are lesbian, gay, or bisexual was estimated to be 2.23. The equivalent estimate for drinking alcohol more than

two days a week was 1.99. Our interpretation is that lesbian, gay and bisexual people are more likely to smoke and drink alcohol than heterosexuals.

[200-207]

Figure 13, below, sets out estimates for the behaviours of lesbian, gay, bisexual, questioning, transgender, and 'other' people aged 16 to 25.

Figure 13 Behaviours of lesbian, gay, bisexual, questioning, transgender, and 'other' people aged 16 to 25 in 2013 (percentage)



Source: Youth Chances Survey of 16-25 year olds 2014, http://www.uktrans.info/attachments/article/320/YouthChancesSurvey-16-25yearOlds_FirstReferenceReport.pdf

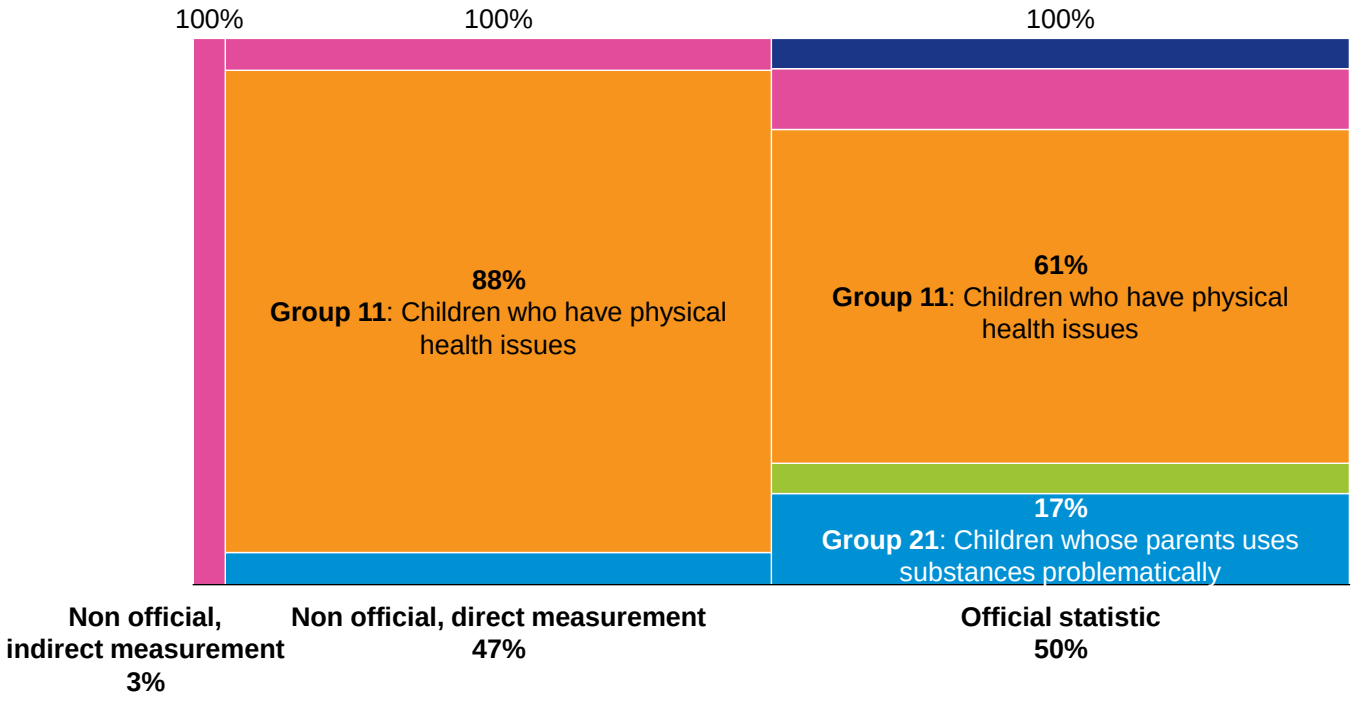
Quality assessment

We classified the quality of the quantitative estimates into three categories:

- Level 1: Non official statistics based on indirect measurements, for example, a regression model
- Level 2: Non official statistics based on direct measurements, for example, a national survey
- Level 3: Official statistics, most of which meet the requirements of national statistics.[9]

In Figure 14, below, we show that 50 per cent of the prevalence estimates were official statistics, and 47 per cent were non official statistics based on direct measurements. In the case of outcome estimates, Figure 15, below, shows that 40 per cent were non official statistics based on indirect measurements, and 37 per cent were non official statistics based on direct measurements.

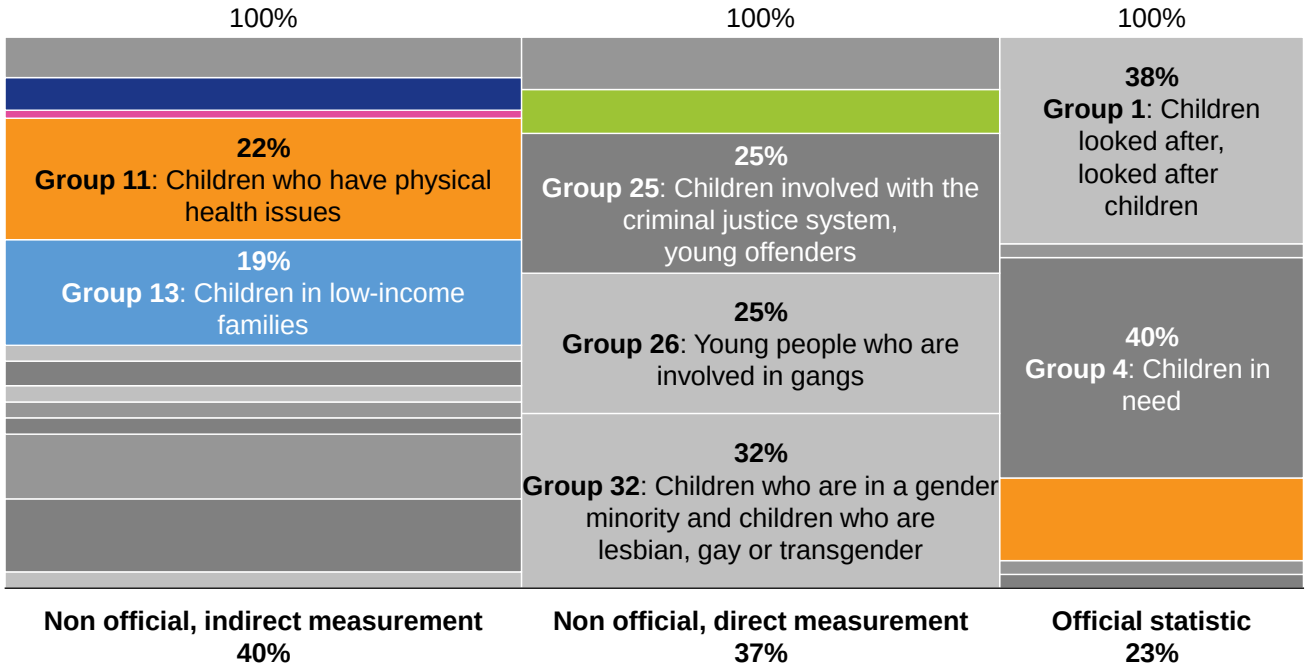
Figure 14 Quality of prevalence estimates



Note: n = 36 highly relevant estimates of prevalence; only those above 16 per cent are labelled
Source: Aldaba

[9] UK Statistics Authority, List of National Statistics, https://www.statisticsauthority.gov.uk/national-statistician/types-of-official-statistics/list-of-national-statistics/

Figure 15 Quality of outcome estimates



Note: n = 171 highly relevant estimates of outcomes; only those above 18 per cent are labelled

Source: Aldaba

Gaps

As shown in Figure 5, above, there were 14 groups for which we were unable to find outcome estimates. Note that the fact that we were unable to find outcome estimates for these 14 groups does not mean that the estimates do not exist.

We can think of the following ways in which these gaps could be addressed:

1. Where the child or young person is already in contact with a known public service, including statutory services, it would be possible for the responsible service to collect additional information. For example, this is the case of adopted children.
2. Where the child or young person is not necessarily in contact with a known public service, it would be possible to identify individuals of similar profiles in existing national surveys and explore their outcomes as measured by the survey. For example, children in poverty are included in surveys such as Understanding Society.[10]
3. Where the child or young person is neither in contact with a known public service, or included in national surveys in sufficiently large numbers, it would be possible to develop new research, including longitudinal surveys of cohorts. For example, children whose parents use substances problematically could be part of new research.

In Table 2, below, we provide details of how gaps could be addressed for each specific group.

Table 2 Groups without identified outcome estimates and research options to address this

		Option 1: Additional information	**Option 2**: National survey analysis	**Option 3**: New research
Safeguarding concerns or in local authority care				
2	Children who are subject to child protection plans.	✓		
5	Unaccompanied asylum seeking children	✓		
6	Care leavers	✓		
7	Children who are subject to a special guardianship order	✓		
8	Adopted children	✓		
Economic circumstances				
12	Children in poverty		✓	
14	Children who are homeless or in insecure/unstable housing	✓		✓

[10] Economic and Social Research Council, Understanding Society, https://www.understandingsociety.ac.uk/

Family circumstances and characteristics				
15	Pre Section 17 (no. 3C)	✓		
19	Undocumented children and children without legal identity/regular immigration status			✓
20	Children in 'troubled families'	✓	✓	
21	Children whose parents use substances problematically	✓		✓
Childhood experience of abuse or exploitation				
28	Children who have been victims of modern slavery or trafficking	✓		✓
Missing and absent children				
29	Missing children			✓
30	Absent children			✓

Source: Aldaba

Recommendations

1. To develop a conceptual approach to prioritising the types of vulnerabilities that are most relevant to the work of the Commissioner. For example, asthma is a vulnerability for which treatments are more effective than in the case of cancer, and therefore it might be less of a priority.
2. To develop a methodology to estimate the overlap between different types of vulnerabilities, so that aggregate estimates do not double count the same individuals, but also help understand multiple vulnerabilities.
3. To consider options to address gaps in outcomes, including the possibilities provided by national surveys such as Understanding Society.

References

Table 3 Prevalence estimates

ID	Source organisation	Source title	Hyperlink	Vulnerability group measured by prevalence estimate	Prevalence domain	Prevalence estimate	Prevalence estimate description	Prevalence year	Prevalence quality rating
1	Department for Education	Special educational needs in England: January 2016	https://www.gov.uk/government/s	09-Children who have special educational needs and/or disability (SEND)	Condition	1,228,785.00	Pupils with special educational needs	2016	3 - Official statistic
2	Public Health England	National Child and Maternal Health Intelligence Network. CAMHS needs assessments	http://atlas.chimat.org.uk/IAS/profi	10-Children who have mental health difficulties	Overall health	2,773,460.00	Prevalence of people aged 0 to 17 in need of tier 1 to 3 child and adolescent mental health services	2014	1 - Non official statistic based on indirect measurement
3	Public Health England	Health behaviours in young people	https://fingertips.phe.org.uk/profil	10-Children who have mental health difficulties	Overall health	83,936.61	Low mental health satisfaction, 15 year olds	2015	2 - Non official statistic based on direct measurement
4	NHS Confederation	Key facts and trends in mental health: 2016 update	http://nhsconfed.org/resources/20	10-Children who have mental health difficulties	Condition	51,000.00	Referrals to psychological therapies for 15 to 19 year olds	2014	3 - Official statistic
5	Public Health England	Healthcare use	https://fingertips.phe.org.uk/profil	10-Children who have mental health difficulties	Condition	10,028.00	Hospital admissions for mental health conditions, aged 0 to 17	2016	3 - Official statistic
6	Public Health England	Public Health and NHS Outcomes Frameworks for Children	http://fingertips.phe.org.uk/profile/	11-Children who have physical health issues	Overall health	16,748.00	Live births with a recorded birth weight under 2500g and a gestational age of at least 37	2015	3 - Official statistic
7	Royal College of Paediatrics and Child Health	State of Child Health Report 2017	http://www.rcpch.ac.uk/state-of-	11-Children who have physical health issues	Overall health	217,025.55	Children with an unhealthy weight (overweight, obese, underweight) at age 10	2015	3 - Official statistic
8	Royal College of Paediatrics and Child Health	State of Child Health Report 2017	http://www.rcpch.ac.uk/state-of-	11-Children who have physical health issues	Overall health	160,813.93	Children at an unhealthy weight (overweight, obese, underweight) at age 4	2015	3 - Official statistic
9	Royal College of Paediatrics and Child Health	State of Child Health Report 2017	http://www.rcpch.ac.uk/state-of-	11-Children who have physical health issues	Overall health	213,159.41	Children with obvious tooth decay at age five	2015	3 - Official statistic
10	Council for Disabled Children	Understanding the needs of disabled children with complex needs or life-limiting conditions	https://councilfordisabledchildren.	11-Children who have physical health issues	Condition	206,400.00	Children and young people whose day to day activities are limited a lot by a health problem or	2011	2 - Non official statistic based on direct measurement
11	Council for Disabled Children	Understanding the needs of disabled children with complex needs or life-limiting conditions	https://councilfordisabledchildren.	11-Children who have physical health issues	Condition	305,100.00	Children and young people whose day to day activities are limited a little by a health problem or	2011	2 - Non official statistic based on direct measurement
12	Public Health England	Health behaviours in young people	https://fingertips.phe.org.uk/profil	11-Children who have physical health issues	Condition	86,387.32	Numbers with a long-term illness, disability or medical condition diagnosed by a doctor at age 15	2015	2 - Non official statistic based on direct measurement
13	Public Health England	Public Health and NHS Outcomes Frameworks for Children	http://fingertips.phe.org.uk/profile/	11-Children who have physical health issues	Condition	40,491.00	Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s	2015	3 - Official statistic
14	Public Health England	Public Health and NHS Outcomes Frameworks for Children	http://fingertips.phe.org.uk/profile/	11-Children who have physical health issues	Condition	45,148.00	Emergency admissions for children aged 0 to 18 with lower respiratory tract infections	2015	3 - Official statistic
15	Public Health England	Public Health and NHS Outcomes Frameworks for Children	http://fingertips.phe.org.uk/profile/	11-Children who have physical health issues	Condition	129,022.00	Chlamydia detections aged 15-24	2015	3 - Official statistic

Note: The full table is available as a spreadsheet alongside this report

Source: Aldaba

Table 4 Outcome estimates

ID	Source organisation	Source title	Hyperlink	Vulnerability group experiencing outcome	Outcome domain	Outcome type	Outcome estimate	Outcome estimate description	Outcome year	Outcome quality rating
37	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	21,070.00	Looked after chidlren with a Special Educational Need (SEN), including both those with and without	2015	3 - Official statistic
38	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	220.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
39	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	1,290.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
40	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	1,010.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
41	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	370.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
42	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	2,920.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
43	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	650.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
44	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Physical health	60.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
45	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Physical health	60.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
46	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Physical health	20.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
47	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Physical health	190.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
48	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Mental health	790.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
49	Department for Education	Outcomes for children looked after by LAs	https://www.gov.uk/government/s	01-Children looked after/looked after children	Condition	Physical health	140.00	Children who have been looked after continuously for at least 12 months with a Special Educational	2015	3 - Official statistic
50	Department for Education	Looked after children statistics	https://www.gov.uk/government/s	01-Children looked after/looked after children	Overall health	Mental health	17,375.00	Looked after children whose emotional and behavioural health was borderline or cause for	2016	3 - Official statistic
51	Department for Education	Looked after children statistics	https://www.gov.uk/government/s	01-Children looked after/looked after children	Behaviour	Physical health	1,850.00	Children who have been looked after continuously for at least 12 months known to have substance	2016	3 - Official statistic

Note: The full table is available as a spreadsheet alongside this report

Source: Aldaba

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