ESTIMATES OF THE NUMBER OF INFANTS (UNDER THE AGE OF ONE YEAR) LIVING WITH SUBSTANCE MISUSING PARENTS

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INTRODUCTION

Almost a decade ago, the influential Hidden harm report (Advisory Council on the Misuse of Drugs, 2003) estimated that there were between 250,000 and 350,000 children (under the age of 16) of problem drug users in England and Wales and the Alcohol harm reduction strategy for England (PMSU, 2004) estimated that there were 780,000–1.3 million children under 16 of adults with an alcohol problem. These estimates for the first time revealed the widespread exposure of children to the impacts of parental substance misuse and they have had a profound impact on policy across the UK.

These initial estimates were based on extrapolations of treatment data alone, or estimates from other countries, prompting the need to generate improved figures using local epidemiological data sources to inform UK policy. Through secondary analyses of several UK household surveys, Manning et al, (2009) generated new and broader estimates. Around 30% of children under-16 years, the equivalent of 3.3–3.5 million in the UK were estimated to be living with at least one binge drinking adult, 8% (around 978,000) with an illicit drug using adult, 72,000 with an injecting drug user, and 4% (half a million) with an adult defined as a problem drinker with a co-morbid mental health problem. It was also estimated that around 1% (12,000) witnessed violence directed at a parent as a result of another adult’s alcohol use. The report emphasised that whilst harm from parental substance use is not inevitable, the risk of sub-optimal care of those children was likely to be higher among these households.

To date in the UK, estimates on the number of children living with parental substance misusers have generally been restricted to the total population of children under 16. Two key factors motivated us to delve deeper into the data and estimate the number of babies in such circumstances:

(i) Firstly, evidence from across developed countries highlights that **babies are at elevated risks of abuse and neglect** – and that substance misuse is a frequent feature in such cases (Brandon et al 2009; Department of Education, 2010; Cuthbert et al, 2011; Unicef, 2003) and

(ii) Secondly, recent neurobiological and developmental research highlights the existence of **‘critical’ and ‘sensitive’ periods of development** during pregnancy and the first year of life in laying the foundations for children’s subsequent development

(Shonkoff, 2007; Gerhardt, 2004). Adverse early experiences can have a profound effect on emotional wiring and constitute major risk factors for the development of mental health or substance use disorders in later life (Felitti, 2002; Glaser, 2000). Early experiences of fear and stress are associated with neuro-chemical responses such as increased cortisol, which can affect brain structure and ultimately emotional processing and regulation in later life (Gunnar & Donzella, 2002). This rich body of emerging evidence indicates that the initial years can be periods of both profound opportunity and profound vulnerability.

Several major policy reviews across the UK have lent their weight to the importance of ‘early help’ and ‘early intervention’ (Allen, 2011; Munro, 2011; Field, 2011; Burns 2007; Deacon, 2011). Therefore, recognising the research and policy spotlight on a baby’s first year, this paper for the first time estimates specifically the numbers of babies under the age of one who are exposed to parental substance misuse.

Parental substance misuse is just one of a number of ‘parental stressors’ which can have an adverse effect on children’s wellbeing and increase a child’s risk of abuse and neglect. Domestic violence and parental mental health problems are also widely recognised as markers of risk of harm for dependent children. Therefore we have also calculated the prevalence of these problems among parents with a child under one in the household.

It should be stressed from the outset, that exposure to parental substance misuse by no means inevitably leads to poor outcomes for dependent children. However, parental substance misuse can harm children’s development both **directly** through exposure to toxins in utero and through the effects of withdrawal at birth; and also **indirectly** through its impact on parenting capacity and the home environment in which children are brought up (Cuthbert, 2011).

The nature and severity of the harm not only differs with the age of the child, but is heavily influenced by the broader context in which substance misuse occurs, including factors such as poverty, social isolation, inadequate parenting skills and parental conflict. Child maltreatment or neglect might exist when limited finances are prioritised for the procurement of drugs/alcohol over basic needs of the child. It may take the form of poor monitoring leading to accidents in the home due to impaired judgement resulting from acute intoxication, being unresponsive to the child’s emotional or material needs and/or failing to provide a stable nurturing environment. Problematic drinking by parents is...
associated with negative features of parenting (such as low warmth and high criticism), though the relationship is complex and influenced by the presence of additional risk and protective factors. Parenting capacity can be damaged when parents become less loving, caring, nurturing, consistent or predictable (Cleaver, 1999, 2007).

METHOD

Despite increasing recognition of the heightened vulnerability of babies and infants to harm from parental substance use, there are currently no estimates on the number of babies in such circumstances. The current study applied the methodology used in the most recent UK estimates (Manning et al, 2009), on the latest National Psychiatric Morbidity Survey (2007) to generate estimates on the number of babies under one year living with families where parental substance misuse exists as well as other relevant ‘parental stressors’ such as mental illness and domestic abuse.

The National Psychiatric Morbidity Survey was selected for analysis on the basis of its robust coverage of relevant data and its use of standardised clinical assessment tools to capture substance misuse and mental health problems. This enabled more reliable estimates to be made through the adoption of standardised definitions of problematic alcohol use rather than estimates based on alcohol consumption (units) alone. Permission was sought from the UK Data Archive to download a copy of an anonymised data file (see www.data-archive.ac.uk).

The National Psychiatric Morbidity Survey 2007 is the third in the series, with the previous surveys conducted in 1993 and 2000. The 2007 survey was administered by the National Centre for Social Research (NatCen) in collaboration with the University of Leicester in England only. The primary objective was to collect data on mental health among adults aged 16 and over living in private households in England. A two-phase approach was used, in the first phase interviews included structured assessments serving diagnostic criteria and screening instruments (interviews lasted about 90 minutes on average) using computer-assisted interviewing. In phase two, interviews were carried out by clinically trained research interviewers. The survey adopted a multi-stage stratified probability sampling design. The survey data were weighted to take account of non-response, so that the results were representative of the household population aged 16 years and over. One adult aged 16 years or over was selected for interview in each household. At the phase one interview, 57% of those eligible agreed to take part in an interview generating a total sample of 7,043. For further detail on the survey methodology see McManus et al (2009) or www.ic.nhs.uk/pubs/psychiatricmorbidity07

After removing irrelevant variables, the database was re-coded according to the populations of interest in the current study. Respondents aged 16 years or older provided information on the age, gender, and relationship of each person in the household to themselves. Variables were added to identify those who were substance users and met criteria for misuse. A variable was then added to identify households where one of the Persons 1–9 was under-1. A variable was then added to identify instances when the relationship of the aged under 1 household member to person 1 (respondent) was that of child or step-child. The total number of children under the age of 1 living with the respondents formed the denominator. The total number of under-1s living with those identified as substance misusers was then divided by the denominator (total under-1s living within these households) to give a percentage (proportion) of children who live with a parental substance misuser. This percentage was then extrapolated to the total number of children under the age of 1, living in the country at the time of the survey, using the Office of National Statistics interactive population pyramid http://www.statistics.gov.uk to generate an estimate. All estimates were added to a summary table and confidence intervals calculated.

DEFINITIONS

Substance use

Consistent with the approach adopted by the World Health Organisation, we have taken the definition of ‘Problem drinker’, which refers to someone who fulfils criteria for ‘hazardous’ or ‘harmful’ drinking as measured by the Alcohol Use Disorders Identification Test (Saunders, et al, 1993). A score of 8 or more on the AUDIT indicates ‘hazardous’ drinking – a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others. A score of 16 or more indicates ‘harmful’ drinking; that is consumption that results in consequences to physical and mental health. In addition to hazardous and harmful use, ‘alcohol dependence’ was assessed using the Severity of Alcohol Dependence Questionnaire, community version (Stockwell et al, 1983). On this measure, a score of 4–19 indicates mild dependence; a score of 20–34, moderate dependence; and a score of 35 or more, severe dependence. For the purpose of this report a dependent drinker refers to anyone scoring 4 or more (i.e. at least mild dependence).
For drugs, eight drug types (cannabis, amphetamines, crack, cocaine, ecstasy, tranquillisers, opiates and volatile substances) were examined. The survey examined use of each drug in the preceding year, and based on the Diagnostic Interview Schedule (Robins et al, 1982), had five questions to assess drug dependence in the past month and past year and included questions on:

- Daily use for 2 weeks or more
- A sense of need or dependence
- An inability to abstain
- Increased tolerance
- Withdrawal symptoms

Use of a drug in the last year and the presence of at least one of the above five items was used in the survey to indicate drug dependence. Dependence was further classified into dependence on cannabis only and dependence on other drugs (with or without cannabis dependence).

### Mental Health

Common mental disorders and neurotic symptoms were assessed using the revised Clinical Interview Schedule (CIS-R) (Lewis et al., 1992) a structured interview designed to assess symptoms of anxiety and depression in non-clinical populations. The common mental disorders assessed were:

- Mixed Anxiety and Depressive Disorder
- Generalised Anxiety Disorder
- Depressive Episode
- All phobias
- Obsessive Compulsive Disorder
- Panic disorder
- Any common mental disorder.

The total score reflects overall severity of neurotic symptoms and a score of 12 or above indicates the likely presence of a common mental disorder.

### Domestic Violence

Respondents were asked if they had experienced any of the following forms of domestic violence; During the past year, has your partner:

- hurt you or someone close to you
- pushed, held, pinned or slapped you
- kicked, bit, hit, or thrown something at you
- choked or tried to strangle you
- threatened you with a weapon
- threatened to kill you
- used a weapon
- used other force.

### RESULTS

7,403 adults responded to the National Psychiatric Morbidity Survey. Of these, 186/7,403 (2.5%) were identified as being the parent to at least one under 1 year old in the household, and with them, lived a total of 194 babies; 179 (96.2%) had only one baby, 6 (3.2%) had 2 babies and 1 (0.5%) had 3 babies.

#### Sample demographics of the parent sample (n=186)

Just over two-thirds of the parent responders were female (126; 67.7%) and the mean age was 31.7(±6.2) years (range=16–47). Most (84.4%) were either married or co-habiting, 10.2% were single and 5.3% were either separated, divorced or widowed.

#### Substance misusers

(i) **Alcohol**

129/186 (69.4%) parents reported that they drink alcohol, a total of 131 babies live with these parents therefore 67.5% (131/194) of babies live with a parent who drinks alcohol. Twenty-three parents met criteria for (hazardous or harmful) problem drinking. Since a total of 24 infants were reported to be living with these 23 parents, the proportion of infants living with a problem drinker was 12.37% (24/194). Since the total number of infants (under 1) during the year of the survey was 641,000 in England alone and 756,000 in the UK, the estimated number of infants living with a parent who is a problem drinker is 79,291 (CI=49,594–108,990) in England and 93,517 (CI=58,491–128,543) in the UK. Seventeen parents were hazardous drinkers, and lived with a total of 18/194 (9.28%) babies, 6 parents met criteria for harmful drinking and lived with a total of 6/194 (3.09%) babies and 7 parents met criteria for at least mild dependence and lived with 8/194 (4.12%) babies. For estimates on the total number of children affected in England and the UK see Table 1.

(ii) **Illicit drugs**

12/186 (6.5%) parents reported having used drugs in the past year, a total of 13 infants live with these parents, therefore 6.7% (13/194) babies live with a drug using parent. Five parents reported use of a class A drug in past year with a total of 5 (2.58%) babies. Cannabis use in the past year was reported by 7 parents with 7 (3.61%) babies, cocaine use in the past year by 5 parents with 5 (2.58%) babies, poppers were used by only 3 parents with 3 (1.55%) babies, amphetamines by only 2 parents with 2 (1.03%) babies and
ecstasy, crack cocaine and tranquillisers were each used by only 1 parent each with 1 baby (0.52%). There were no reports of parents using mushrooms, steroids, glue or opiates. Regarding drug dependence, only 7 parents with 7 (3.61%) babies met criteria for drug dependence; 5 were dependent on cannabis with 5 (2.58 %) babies, and 2 parents were dependent on cannabis in addition to another drug and had 2 (1.03 %) babies. There was no injecting drug use or overdose reported among parents of infants in the household. Five parents were both drug users and problem drinkers and had a total of 6 (3.09%) babies, 3 parents were both drug dependent and problem drinkers and had a total of 3 (1.55%) babies. In total 27 of the parents (14.5%) were either a drug user or problem drinker, and had a total of 28 (14.43%) babies.

For estimates on the total number of children affected in England and the UK see Table 1.

Socio-demographics of the parental substance misusers
The mean number of people in the household was 4 (range=2–6). The mean age of the 27 parental substance misusers was 31.4 (±6.1) (range=20–44); almost three-quarters (20/27) were male. Almost all were White Caucasian (n=25) with 1 South Asian and one failing to report their ethnic origin. Most (24/27), were either married or co-habiting, 2 were single and 1 was divorced. The majority reported having some qualifications (25/27) of CSE level or above. The mean household annual total income was £29,794 (ranging from £1,397–£66,513).

None of the small number of pregnant women in the wider survey sample fulfilled criteria for problem drinking or drug use.

(iii) Mental Health and Domestic Violence
37/186 parents (19.9%) met the assessment criteria for the presence of a common mental health disorder (a score of >12 on CSI-R) and these reported having a total of 37 infants, thus (19.07%) of babies under 1 lived with a parent with a common mental health disorder.

In total ten babies under 1 (5.15%) were living with a parent who had experienced domestic violence in the past year.

DISCUSSION
The study findings indicate that more than one quarter of babies under 1 may be at increased risk of harm from living with a parent, who is either a problem drinker, a class A drug user (past year), has a common mental health disorder or has experienced domestic violence in the past year. On a national scale, this equates to around 168,000 in England. If the same prevalence applied in the rest of the UK, this would equate to 198,000 babies under 1.

The findings also indicate that:

- Approximately one in five babies under 1 – equivalent to 144,000 in the UK – live with an adult with a common mental disorder.
- One in seven babies under 1 – equivalent to almost 110,000 in the UK – live with a substance misusing parent (defined as meeting criteria for problem drinking or illicit drug use in the past year).
- Approximately one in eight babies under 1 – equivalent to almost 94,000 in the UK – live with a parent who is a problematic alcohol user.
- One in 15 babies under 1 – equivalent to over 50,000 in the UK – live with a parent who uses illicit drugs.
- Cases of parental drug dependency were relatively uncommon in the NPDS sample, but on a national scale this equates to over 27,000 babies under 1 in the UK.
- No parents of babies under 1 in the sample reported using opiates, injecting drugs or having experienced an overdose.
- One in 20 babies under 1 – 39,000 in the UK live with a parent who has experienced some form of domestic violence from a partner within the last year.

The strength of the NPMS over other household surveys is its use of standardised measures to assess problematic substance use. Nonetheless it must be borne in mind that these figures likely remain a considerable underestimate of the actual numbers of babies under 1 living with parental substance misuse. There are methodological limitations of the current study, namely its reliance on data generated from a survey that was not designed specifically to address the current research question. Respondents may be more likely to under-report the extent of their alcohol or drug use when completing an official survey conducted in their home environment.

Another caveat is that the estimates are based on only the respondent’s (parent or step-parent’s) reported substance use. Therefore it does not capture the full extent of substance use that may exist in the household from other adults (e.g. the other parent, or older siblings) that could potentially be causing harm to the baby. Analysis indicated that among households with an infant in the house, the respondents were predominantly female (68%). Since women generally consume
Estimates of the number of infants (under the age of one year) living with substance misusing parents

lower quantities of alcohol and are less likely to drink problematically or use illicit drugs (ONS, 2007, 2010) the estimates are likely to be lower than they would be had more males (fathers) been the respondent. Finally, the percentages of babies under 1 identified in the survey as living with substance-using parents are extrapolated to the national population data to generate estimates on the actual number of infants in such predicaments. Since the 2007 NPMS survey was conducted in only England, which may not be representative of the situation in Scotland, Northern Ireland and Wales, caution must be exercised when using the UK estimates.

It is important to emphasise that the presence of parental substance misuse, mental illness or domestic abuse does not necessarily translate to harm. These data shed no light on the context in which such complex family problems take place. Our understanding of the association between parental substance misuse and harm to children is predominantly based on examinations of the reports from official court records, social services or child protection data (e.g Forrester, 2000, 2007). More research is needed to understand the association between parental stressors and child maltreatment in normative samples of the population.

Research aiming to determine the extent and nature of harm to babies is fraught with methodological challenges. Since the child cannot be interviewed, front-line staff must rely on direct observation and non-verbal cues, clinical assessments, parental report and information from other sources. Because of the legal and social consequences, and fear of children being placed in care homes, substance abusers known to the addiction treatment system may be less inclined to report acts of abuse or neglect and equally parents already known to the child welfare system may be unlikely to disclose their substance misuse. The sensitive and elusive nature of data on harm resulting from parental substance misuse is recognised as a significant obstacle to research efforts aimed at increasing our understanding and informing policy.

An estimate of the numbers potentially at-risk of harm from parental substance misuse is merely one small step in the right direction. A deeper understanding of the extent and mechanisms whereby the risk of harm translates into actual harm is needed to inform prevention and harm minimisation efforts.

The current data do not tell us whether parental substance misusers are responsible for childcare at the time they are (mis)using substances. If the binge drinking or drug consumption occurs within the home the risks extend to exposure, negative role-modelling and experimental ingestion leading to possible poisoning. When parents are under the influence of substances, judgment, attention and concentration can be impaired leading to risk-taking or inadequate supervision/monitoring, placing the infant at increased physical risk of accidents. Parents are less likely to respond appropriately and be less tolerant of a child’s behaviour e.g. a crying baby unable to sleep.

Substance use (or cessation of use for those more dependent) can make people impulsive, irritable, aggressive and less able to regulate emotion and behaviour. The emotional and social needs of the child may not be met if the parent is home-bound recovering from periods of substance use (e.g. hungover) instead of providing a stimulating and nurturing environment. Parents with irregular sleep patterns resulting from substance use may miss feeding, bath or bed times and other bond-promoting activities. Physical care of the infant such as the sterilisation of equipment, sanitation, regular feeding intervals may be compromised.

In recent years, drug strategies and policy documents on child health and welfare have demonstrated increased awareness and commitment to preventing and minimising harm from parental substance use (e.g. Cabinet Office, 2008; HM Government, 2008). The Munro Review (2011) argues that whilst social and health care practitioners are in the strongest position to respond to abuse manifested in a crisis, those working in early years settings with frequent and regular contact are in the strongest position to identify chronic forms of maltreatment such as neglect and emotional abuse. In the context of the perinatal period, midwives, health visitors and general practitioners have a critical role to play in the identification of vulnerability and need.

Positive outcomes are emerging from evaluations of programmes targeting young, low-income, pregnant mothers with limited social support such as those offering frequent and regular monitoring of the child via home-visits for the initial years (Olds, 2005). Addiction programmes offering integrated care that includes pre-natal or parenting services have highlighted how children can motivate behaviour change among substance misusing mothers and how programmes can enhance parenting capacity (Sword et al, 2009; Dawe & Harnett, 2007). Further research and rigorous evaluation is required to build on these promising approaches. Ultimately, these must be matched by a commitment from government to ensure that all vulnerable babies receive evidence based preventative support.
Table 1: Estimate of children under 1 in both England and the whole of the UK living with a parent who ...

<table>
<thead>
<tr>
<th></th>
<th>Estimate [Confidence Interval] for England (n=641,000)</th>
<th>Estimate* [Confidence Interval] for UK (n=756,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>is a substance misuser†</td>
<td>28 14.43 92,496 [60,800–124,192]</td>
<td>109,091 [71,708–14,6474]</td>
</tr>
<tr>
<td>has a common mental health problem</td>
<td>37 19.07 122,238 [86,803–157,675]</td>
<td>144,169 [102,376–185,963]</td>
</tr>
<tr>
<td>is a hazardous drinker</td>
<td>18 9.28 59,484 [33,313–85,657]</td>
<td>70,157 [39,289–101,024]</td>
</tr>
<tr>
<td>is a dependent drinker</td>
<td>8 4.12 26,409 [8,481–44,337]</td>
<td>31,147 [10,003–52,291]</td>
</tr>
<tr>
<td>used amphetamines (past year)</td>
<td>2 1.03 6,602 [0–15,709]</td>
<td>7,787 [0–18,528]</td>
</tr>
<tr>
<td>used ecstasy (past year)</td>
<td>1 0.52 3,333 [0–9,821]</td>
<td>3,931 [0–11,583]</td>
</tr>
<tr>
<td>used tranquillisers (past year)</td>
<td>1 0.52 3,333 [0–9,821]</td>
<td>3,931 [0–11,583]</td>
</tr>
<tr>
<td>used poppers (past year)</td>
<td>3 1.55 9,871 [0–20,979]</td>
<td>11,642 [0–24,742]</td>
</tr>
<tr>
<td>used crack cocaine (past year)</td>
<td>1 0.52 3,333 [0–9,821]</td>
<td>3,931 [0–11,583]</td>
</tr>
<tr>
<td>used mushrooms, steroids, opioids (past year)</td>
<td>0 0.00 0</td>
<td>0</td>
</tr>
<tr>
<td>is dependent on another drug</td>
<td>2 1.03 6,602 [0–15,709]</td>
<td>7,787 [0–18,528]</td>
</tr>
<tr>
<td>is a problem drinker &amp; drug dependent</td>
<td>3 1.55 9,871 [0–20,979]</td>
<td>11,642 [0–24,742]</td>
</tr>
<tr>
<td>has experienced domestic violence (past year)</td>
<td>10 5.15 33,012 [13,076–52,947]</td>
<td>38,934 [15,421–62,447]</td>
</tr>
</tbody>
</table>

* it is important to note that estimates for the UK are based on applying % rates observed in the England 2007 National Psychiatric Morbidity Survey to UK wide population estimates.
† problem drinker or drug use in last year
‡ problem drinker, class A drug user (past year) mental health disorder or victim of domestic violence
Estimates of the number of infants (under the age of one year) living with substance misusing parents

REFERENCES


Cuthbert, C., Rayns, G. & Stanley, K. (2011) All babies count. NSPCC.


