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EPIDEMIOLOGY: ARE MENTAL HEALTH PROBLEMS IN CHILDREN AND YOUNG PEOPLE REALLY A BIG ISSUE?

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This chapter discusses

- What we mean by mental health problems in childhood
- How common mental health problems are in childhood and adolescence
- Ways of measuring child and adolescent mental health problems
- How mental health problems in childhood and adolescence develop
- Why mental health problems in children and young people are important
- What kinds of services are available to help

Introduction

Mental health problems in children and adolescents are common and distressing. Although the majority of children and young people rate their wellbeing as good most of the time, a significant minority will suffer from some kind of mental health problem as they grow up. Prevention, early intervention and treatment are all important for improving children's outcomes.

Mental health problems in childhood encompass a broad range of disorders that affect thinking, feeling or mood, and have an impact on everyday functioning. Those most frequent problems in the childhood years include anxiety and depression, eating disorders, conduct disorder (serious antisocial behaviour), substance use disorders, attention deficit and hyperactivity disorder (ADHD), and difficulties associated with

autism spectrum disorder. During childhood and adolescence there can also be the early signs of the precursors of rarer problems such as personality disorders or bipolar disorders.

In this chapter we will focus on specific mental health problems, rather than more generic emotional difficulties such as responses to life events like bereavement. All children will experience the latter to some degree in their lives, and these kinds of problems are too diffuse to be captured in epidemiological research except perhaps through measurements of wellbeing and happiness, which we do not cover here.

It has been estimated that three-quarters of young adults with mental health disorders will first have met criteria for disorder before the age of 18 (Kim-Cohen, Caspi, Moffitt, Harrington, Milne, & Poutton, 2003). Mental health problems have important implications for every aspect of young people's lives, including their ability to engage with education, make and keep friends, engage in constructive family relationships and find their own way in the world. Yet there is stigma associated with discussing the issues, families often feel isolated, and getting help can be a challenge as services are limited. We need to understand the pattern of child and adolescent mental health disorders in order to target interventions and, where possible, help prevent problems from arising.

How common are mental health problems in childhood and adolescence?

How do we know the answer to this question?

The methods of epidemiology offer a way of describing and measuring child and adolescent mental health problems. **Epidemiology** is the study of the distribution and determinants of health and disease in populations. The key measures of interest to us here are incidence and prevalence. **Incidence** relates to new occurrences; how many children develop mental health problems? This might be measured across childhood, or over a set period of time such as across the course of one year. **Prevalence** relates to existing occurrences; what proportion of children have a mental health problem at any given point ('point prevalence')?

The measures used for assessing mental health problems and the methods used for surveying populations are critical to our confidence in the findings of epidemiological studies, and affect our ability to generalize from the findings. The standard systems for measuring child and adolescent mental health problems are the diagnostic systems of the American Psychiatric Association (Diagnostic and Statistical Manual [DSM] of Mental Disorders, 2013), and of the World Health Organization (International Classification of Diseases [ICD]). The advantage of these classification systems is that they are widely accepted, used in much research, and provide a 'common language' for the field. However, they can give the impression of a fixed set of criteria, when in fact they are revised and changed as research evolves. Much of what upsets and challenges children and young people is also hard to fit within standard classification systems (a point we return to later), and reliance on the diagnostic criteria can direct research and treatment to focus just on the more classifiable problems.

However, it is important to recognize how important these systems are for how we think about young people's mental health disorders, and there are a number of different ways of assessing whether children meet the criteria for a disorder in the

DSM or ICD systems. The best use direct semi-structured interviews with children and/or their parents. However, other data are available from surveys that draw on questionnaires rather than interviews, and that use other ways of rating mental health problems other than the DSM and ICD systems. As we do not know as much as we would like about the incidence and prevalence of child and adolescent mental health problems, we have to rely in part on this wider body of research too.

We can also use data from **longitudinal studies**, following up groups of children over a period of several years, to map how disease unfolds and the factors involved in the course that the problems take.

Box 2.1 Key studies: The Avon Longitudinal Study of Parents and Children (ALSPAC)

ALSPAC, also known as the *Children of the 90s* study, has followed approximately 14,000 children in the Bristol area of England since the early 1990s, linking successive waves of data collection to build a picture of the influences on their outcomes as they grow into adulthood. It has resulted in over 1,000 academic papers and a number of important findings, many relating to mental health. Over the years, the children and their families have completed numerous questionnaires, given biological samples for genetic analysis, and allowed their medical and educational records to be followed. A new study, COC090s, is now beginning to follow the children of the *Children of the 90s*.

Findings from the study include, for example, important data on the associations between mothers' binge drinking and behaviour problems in early childhood; the early warning signs in children and adolescents of increased risk of schizophrenia; and the links between self-harm at 16 and a range of health and attainment outcomes at 16–21. These kinds of findings help to focus efforts to identify issues early and intervene to prevent problems from getting worse.

See www.bristol.ac.uk/alspac/ for more details.

There are two key issues about measurement – is it accurate, and does it reflect what we see in practice? Turning first to accuracy, we might for example have questions about the accuracy of parents' reports on their children, which is often how younger children are assessed. Or we might wonder, if we ask young people today about their problems, are the answers comparable to those of young people 20 years ago? What difference does it make to surveys if attitudes to mental health problems change over time and people feel more able to admit difficulties? There is now a large literature addressing many of these issues of accuracy, and we return to the question of time trends below. We know quite a lot, for example, about when parental reporting is and is not accurate. Parents may be better informants for problems that are easier to observe, such as attention and hyperactivity, rather than for internalizing difficulties such as depression (De Los Reyes et al., 2015; Grills & Ollendick, 2002; Van der Ende, Verhulst, & Tiemeier, 2012).

The difficulty is that accuracy comes with the amount of time that can be spent in assessment, and often front-line practice is pressurized for time. In addition, accuracy comes with training, and the real challenge has been to develop ways of assessing

child mental health problems that do not require qualifications in child mental health, so they can be used, for example, in youth work settings. There have been interesting developments lately in improving community-based screening for difficulties. For example, Mental Health First Aid (MHFA) training alerts non-specialists to crucial warning signs of mental ill health that require professional assessment, although this is perhaps more relevant to understanding how to manage risk rather than how to measure frequency of problems. Developed in Australia in 2000, MHFA has now been delivered to over 100,000 professionals in the UK, including teachers.

Box 2.2 Common ways of measuring child and adolescent mental health problems

Diagnostic interviews

Different styles of interview have been developed to assess common mental health problems (Angold, Erkanli, Copeland, Goodman, Fisher, & Costello, 2012):

- Structured: for example, the Diagnostic Interview Schedule for Children (DISC-IV)
- Interviewer-based/semi-structured: for example, the Child and Adolescent Psychiatric Assessment (CAPA)
- Structured + expert judgement: for example, the Development and Well-Being Assessment (DAWBA)

These interviews typically take between half an hour and an hour to complete.

There are versions for pre-schoolers, school-age children and adolescents, and young adults. Information can be collected from parents/carers, teachers and young people themselves; these interviews can also be used in clinical settings.

Information is collected about the frequency, duration and severity of symptoms, and associated impairments. Computer algorithms (confirmed by review by experts in the DAWBA) are then used to generate DSM/ICD diagnoses and symptom counts.

More specialized interviews have been developed to assess less common disorders (for example, the Autism Diagnostic Interview [ADI] for autistic spectrum disorders).

Questionnaires

Standardized, reliable questionnaires have also been developed to assess many specific aspects of child mental health.

There are also well-established 'broad band' measures that assess the range of common difficulties, and are often used as screening instruments. The most widely used (available in a range of languages) are:

- The Strengths and Difficulties Questionnaire (SDQ) www.sdqinfo.com/. The SDQ includes 25 main questions assessing conduct and emotional problems, hyperactivity, peer difficulties and prosocial behaviours; it also includes a brief impact supplement. Versions are available to assess pre-schoolers and school-age children, and for completion by parents, teachers and young people aged 11 and older.

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- The Child Behavior Checklist (CBCL) www.aseba.org/. The CBCL includes just over 100 questions, and assesses a range of syndromes (anxious/depressed, withdrawn/depressed, rule-breaking behaviour, aggressive behaviour, attention problems, thought problems, somatic complaints, social problems); it also includes DSM-oriented scales. It is part of a suite of instruments for children of different ages, and for completion by parents, teachers and young people.
- The Revised Children's Anxiety and Depression Scale (RCADS), assesses a range of different subtypes of anxiety and depression, providing two total scores and various subscale scores. Several versions exist, including one with 47 items and one with 25. Again there are separate versions for completion by children and adolescents and their parents (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000).

The second issue, that of whether the diagnostic categories reflect what we see in practice, is perhaps more difficult to answer, as we lack good representative data on the types of cases that do not meet the criteria for formal psychiatric service input. These may involve children and young people who are seen in general practice, or in voluntary sector organizations working with young people in difficulty. In these cases, counsellors and other practitioners often reflect that children and young people might still have severe problems even if they do not fall neatly into a formal diagnosis. Epidemiological studies reporting on formal diagnoses may not represent the full range of complicated issues young people can present with. Overlaps of disorders are also very common. One nationally representative study of over 10,000 American adolescents concluded that approximately 40 per cent of those with one class of formal disorder (anxiety, behaviour problems, mood problems, substance misuse) also met the criteria for a second disorder (Merikangas et al., 2010).

However, the measurement systems we have, leading to representative epidemiological data, are the best available and do give useful estimates of the proportions of the child and adolescent population who are likely to need some kind of support and help as they make the transition through childhood and adolescence and into adulthood. Using these standard systems helps us to compare across different studies, age groups or geographical areas, and some of the more user-friendly screening questionnaires, such as the Strengths and Difficulties Questionnaire (Goodman, 1999), are now widely used across all sectors dealing with children and young people.

Box 2.3 How do we know the difference between mental health problems and the ordinary ups and downs of adolescence?

Moodiness and irritability are of course classic symptoms of adolescence. We know from recent neuropsychological studies that there are many ways in which adolescents' brains are still developing which influence their perspective on the world and affect their behaviour.

It is difficult for young people, parents, teachers and others to know when ordinary teenage ups and downs become a mental health problem that needs intervention.

There are no easy answers to the question, but there are some things to look out for that would suggest a problem is more than just transient moodiness:

- The problem is persistent – ongoing sadness, anxiety or irritability
- There is a sense of hopelessness and not being able to enjoy regular activities, with possibly recurrent thoughts of death and suicide (not necessarily with any action plan)
- The young person regularly expresses negative, distressing or unusual thoughts
- Physical symptoms are also present – difficulties with sleeping (too much, or insomnia), changes to appetite, heart palpitations
- Mood interferes with the ability to do regular daily things
- There are changes in performance at school, college or work

If young people show several of these difficulties on most days, for two weeks or longer, it is likely that more support is needed and possibly intervention.

Useful information on these issues for parents and children can be found in a number of online resources, including:

- MindEd, a free educational resource on children and young people's mental health for all adults, including a range of e-learning modules, www.minded.org.uk/
- The Site, an online guide to life for 16–25 year olds, including useful pages on mental health problems, www.thesite.org/
- Young Minds, a national charity promoting children and young people's mental health, with extensive resources and a parents helpline, www.youngminds.org.uk/

What do we know from surveys?

The overwhelming and consistent thing that we know from surveys is that child and adolescent mental health problems are common, and always have been – at least, for as long as we have been asking the question. Table 2.1 presents evidence from the last UK representative survey of rates of different mental health disorders in the general population of children and young people (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). The survey was undertaken for the Office for National Statistics (ONS) in 2004. The data suggest that the most common mental health problems from age 5 to 16 are conduct disorders (antisocial behaviour), and emotional disorders (including depression and anxiety). Hyperkinetic disorders (including ADHD) are the third most common group of problems, indicated by poor attention, hyperactivity and impulsivity across a number of settings, home and school. Overall, emotional disorders are more common in girls across this age range, and conduct disorders are more common in boys. At any one time, we can expect nearly 10 per cent of children between 5 and 16 years to have a measurable mental health problem.

The reported prevalence of mental health problems in the 2004 ONS survey varied by ethnicity. Rates of mental health problems were higher in some ethnic minority groups (Black), and lower in others (Indian, Pakistani and Bangladeshi). This is a complicated question, because as well as reflecting real differences in rates of problems, the findings may also reflect cultural differences in measurement and assessment; but this is a fairly generally reported pattern and thus an important issue to

Table 2.1 Prevalence of mental disorders by age and sex, Great Britain, 2004.^a

	5–10 year olds (%)			11–16 year olds (%)			All children (%)		
	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All
Type of disorder									
Emotional disorders	2.2	2.5	2.4	4.0	6.1	5.0	3.1	4.3	3.7
Conduct disorders	6.9	2.8	4.9	8.1	5.1	6.6	7.5	3.9	5.8
Hyperkinetic disorders	2.7	0.4	1.6	2.4	0.4	1.4	2.6	0.4	1.5
Less common disorders	2.2	0.4	1.3	1.6	1.1	1.4	1.9	0.8	1.3
Any disorder	10.2	5.1	7.7	12.6	10.3	11.5	11.4	7.8	9.6
<i>Base (weighted)^b</i>	<i>2,010</i>	<i>1,916</i>	<i>3,926</i>	<i>2,101</i>	<i>1,950</i>	<i>4,051</i>	<i>4,111</i>	<i>3,866</i>	<i>7,977</i>

^a Prevalence rates are based on the ICD-10 Classification of Mental and Behavioural Disorders with strict impairment criteria – the disorder causing distress to the child or having a considerable impact on the child's day-to-day life.

^b The weighted base represents statistical adjustments made so that the sample represents the total population.

Source: Green et al. (2005).

keep in sight. The distribution of disorders also appeared to be associated with social background. Young people living in households with higher levels of parental educational qualifications had lower levels of mental disorders.

Hyperkinetic disorders include attention deficit and hyperactivity disorder, and the key symptoms are inattention, impulsiveness and hyperactivity. This group of disorders is less common than emotional or conduct disorders, affecting between 0.4 and 2.7 per cent of children depending on age and gender. Rates are consistently higher in boys than girls.

Two other important groups of disorders include eating disorders and autism spectrum disorders. Eating disorders often start in adolescence, and it is estimated that around one in 250 females and one in 2,000 males will experience anorexia nervosa, usually as an adolescent or young adult, and that around five times this number will suffer from bulimia nervosa (National Collaborating Centre for Mental Health, 2012). Anorexia is in fact the most fatal mental health disorder, with an estimated mortality rate of around 10 per cent (Arcelus, Mitchell, Wales, & Nielsen, 2011). However, good representative community surveys are rare.

Turning to autism, the new DSM-5, published in 2013, has drawn together the various diagnoses of autism, autism spectrum and Asperger's into an umbrella category of 'autistic spectrum disorder'. The Green et al. (2005) study suggested a prevalence rate of around 1 per cent for these kinds of communication difficulties. Autism is perhaps better characterized as a neurodevelopmental condition rather than a psychiatric disorder, and consists of abnormal social communication and patterns of behaviour. There are ongoing debates as to whether it is best represented as

a spectrum or a set of distinct conditions with similar symptoms, and there are also debates over the point at which communication difficulties should be classified as a disorder. There is no definitive test for autism, and growing awareness of the condition and changing diagnostic criteria make it difficult to estimate prevalence or determine whether there are rises or not. However, it is useful to note that up to 70 per cent of 10–14 year old children with autism have been shown to have co-occurring psychiatric disorders such as social anxiety disorder and attention deficit hyperactivity disorder (Simonoff, Pickles, Charman, Chandler, Loucas, & Baird, 2008).

Box 2.4 Comorbidity: A key debate

Children and young people will often show symptoms of more than one disorder at the same time. As we have already noted, comorbidity, as this is known, is very common, which may indicate that there are issues with how the classification systems are separating out disorders that actually occur together, or perhaps suggesting that there are more general underlying vulnerabilities that could increase risk for multiple disorders. Indeed, some researchers have queried the assumption that mental disorders can be viewed as distinct, categorical conditions; Caspi et al. (2013) used longitudinal data from the Dunedin study to demonstrate that one 'General Psychopathology' dimension (the 'p' factor) may be a more useful way to view the structure of psychiatric disorders.

Other sources of information

As well as national representative surveys, there are other useful sources of information about children and young people's mental health difficulties. We can illustrate some of these by taking the example of self-harm. Self-harm (deliberate cutting or scratching) is often a symptom of depression or anxiety, and causes intense concern for families and schools. However, it is a very private behaviour and a very sensitive topic, and thus difficult to subject to surveys. Estimates of the rates of self-harm in adolescent girls are available from several large-scale surveys such as the English version of the Health Behaviour in School Aged Children Survey (HBSC), the Avon Longitudinal Study (ALSPAC) and various more localized school-based surveys. These suggest rates from around 14 per cent of pupils aged 15–16 (O'Connor, Rasmussen, Miles, & Hawton, 2009) up to 22 per cent (Brooks, Magnusson, Klemmer, Chester, Spencer, & Smeeton, 2015). Rates are up to three times higher in young women than young men (Brooks et al., 2015).

A minority of young people who self-harm end up in hospital; estimates suggest that hospital admissions represent around one in eight cases in the community (Hawton, Saunders, & O'Connor, 2012). However the routine collection of hospital admission statistics ('Hospital Episode Statistics') does allow us to look at trends over time, even though they may represent the tip of an iceberg. In 2014 there were 41,921 hospitalizations for self-harm (self-poisoning and other methods) among 10–24 year olds in England. Rates of hospital admissions for all kinds of self-harm per 100,000 population aged 10–24 have risen from 330 in 2007/8 to 367 in 2013/14 (Hagell, Coleman, & Brooks, 2015). These different data sources demonstrate some of the difficulties of trying to piece together the full picture, particularly for such a private and stigmatized topic as self-harm, much of which receives no treatment. The data also show the importance of using lots of different indicators from different parts of the system when trying to work out prevalence and whether problems are increasing or not.

Trends over time and international comparisons

There is much debate about whether today's generation of young people is more anxious, depressed and stressed than previous generations (Collishaw, Maughan, Goodman, & Pickles, 2004; Hagell, 2012). The evidence suggests that there was a rise in emotional and behavioural problems over the last three or so decades of the twentieth century up to 2000 (Collishaw et al., 2004) but epidemiological data in the early 2000s suggested a levelling out (Maughan, Collishaw, Meltzer, & Goodman, 2008). In fact, in the UK, there has not been a good, national representative survey of child and adolescent mental health problems since 2004, although a new government-funded survey is currently planned. This will reveal what has happened in the intervening decade or so, and whether the anecdotal accounts of rises reported by front-line staff in schools, the health service and the voluntary sector have been reflected in the population data.

Even if good data are available, interpreting time trends is very difficult. If increases in problems are seen, we might suggest that we just diagnose more, or that our criteria for diagnosis have got wider, or that perceptions of 'normal' have changed. However there are methodological checks and balances that can be brought to bear to make us more confident that what we see in the data is indeed what has happened. Thus, for example, in the Collishaw et al. study (see Box 2.5), the strengths of associations between psychiatric symptoms and poor outcomes later in adulthood remained similar over time for three different birth cohorts from 1974 to 1999, suggesting that the results were not attributable to changes in the thresholds of what is counted as a problem. It seemed the increasing time trends were not, for example, the result of an increasing tendency for parents to rate teenagers as having problems, but were instead the result of changes in frequency of problems. The other check is to make sure that different sources of data reflect similar patterns; we saw this with the data on self-harm.

Box 2.5 Key studies: Time trends in adolescent mental health

Collishaw et al. (2004) analysed data from three national surveys of the UK general population, drawing on data from three huge studies of population samples. The focus of the study was 15–16 year olds in **1974** (from the National Child Development Study), in **1986** (from the 1970 Birth Cohort Study) and in **1999** (from the British Child and Adolescent Mental Health Survey).

In each survey, parents completed comparable questionnaires about their children's mental health symptoms. The results showed:

- Adolescent conduct problems showed a continuous rise for both boys and girls over the whole 25-year period.
- Reports of emotional problems (such as depression and anxiety) increased for both girls and boys from the mid-1980s to 1999.
- There were few systematic trends in adolescent hyperactivity over the 25-year period for either boys or girls, with no clear indication that levels are either increasing or decreasing.

In an interesting example of more recent time trends in behaviour problems, the international Health Behaviour in School Aged Children Survey (HBSC) has collected data on fighting from over 30 countries over a number of years. Looking at the 2002–10 data, Pickett et al. (2013) concluded that there were declines over time in two-thirds of the countries involved, including the UK and USA. Rises were seen particularly in countries that had suffered severe economic crises during the intervening years, such as Greece and Spain.

How do mental health problems in childhood and adolescence develop?

Patterns of mental health problems across the lifespan

It is now widely recognized that mental health problems have roots very early in development. Epidemiological studies also suggest that different groups of disorders start at different ages in childhood and adolescence. The neurodevelopmental disorders (including autism spectrum disorders) show the earliest ages at onset, but surveys of adults as well as children find that up to half of all specific phobias, along with separation anxiety disorders and ADHD, will typically have emerged by age 7. Many oppositional and conduct problems also become evident in the late pre-school and early school years.

Surveys of mental health problems in pre-schoolers are a relatively recent development; where they have been undertaken, however, they show that the structure of mental health problems in 3 and 4 year olds is quite similar to that in young school-age children, and that rates of disorder are quite similar too (Angold & Egger, 2007).

As young people approach adolescence – and especially perhaps the onset of puberty – a new set of mental health problems begins to emerge. Depression, social anxieties and eating disorders are among the most important of these. Clinically significant depressive disorders are, of course, found in some younger children, but rates are generally low, and boys are as likely to be affected as girls. From around age 13, however, rates begin to rise quite markedly, and the female preponderance typical of adult depression begins to emerge. By adulthood, women are approximately twice as likely to have depression (Bebbington, 1996). Eating disorders tend to start in the mid-teens and routine Hospital Episode Statistics in the UK show that young people aged 10–19 account for more than half of hospital admissions (Health and Social Care Information Centre, 2014). The largest number of hospital admissions with a primary diagnosis of eating disorders is at age 15 (Hagell et al., 2015). Rates of conduct problems and delinquency also rise from the early to mid-teens, and most disorders associated with alcohol and drug abuse typically start later in adolescence. The early states of psychotic disorders begin to emerge in the late teens, as does panic disorder – which for reasons that are still not well understood, appears to be rare if not non-existent in childhood.

What do we know about the contributing factors?

A vast volume of research has explored risk factors for child mental health problems, and an equally wide range of potential contributory factors have been identified.

We should note at the outset that most of this evidence is correlational in nature. **Correlational studies** infer a relationship between two variables based on the fact they occur together, but usually we cannot assume that one caused the other. For example, if playing violent computer games is associated with increased antisocial behaviour in a **cross-sectional study**, it is impossible to tell which comes first; indeed, both might be caused by a third, unmeasured factor. The experimental studies that would be needed to identify **causal relationships** are rarely feasible in psychiatric research (or indeed in studies of other aspects of human behaviour), though many approaches have been developed to help strengthen **causal inference**, such as taking advantage of natural experiments where, perhaps, one class of school-children is exposed to some kind of intervention when another is not.

The first general message to emerge from research on the causes of mental health problems is that they are multifactorial in origin: a wide range of influences, spanning individual child characteristics, family and peer group influences, and wider social and cultural factors, are all likely to be implicated. Ecological theories of development (see, for example, Bronfenbrenner, 1979) highlight the interplay among different levels of risk, some very near to, some more distant from, the child (see Figure 2.1).

Risks may vary at different stages in development, and for different children with apparently similar problems; indeed, there seems to be marked variability in response to almost all known risks, suggesting that many children also benefit from protective or resilience-related factors that help offset the adverse effects of exposure to risks (for example, Rutter, 2012). A second broad conclusion is that individual risk factors rarely operate in isolation: most disorders probably result from a complex interplay between different types of risk, including biological as well as psychological and social influences (for example, Rutter, Moffitt, & Caspi, 2006). And finally, though some risk factors are relatively specific to particular disorders, many show associations with a broad spectrum of child outcomes. Child abuse and neglect is an example here.

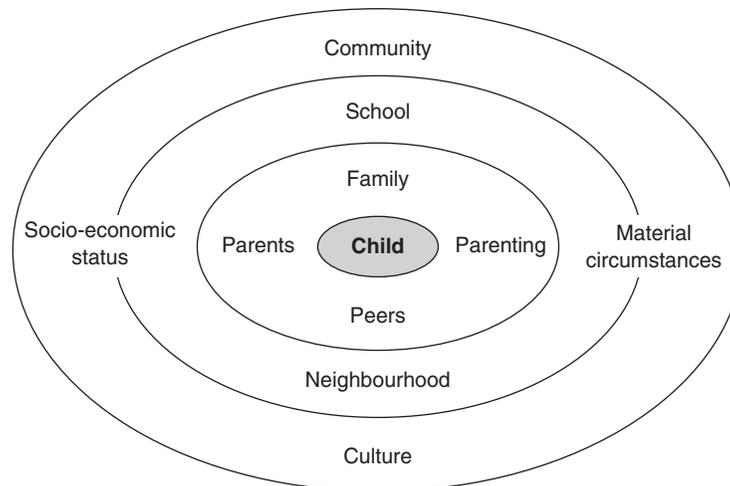


Figure 2.1 Factors influencing mental health problems

Box 2.6 Risk factors for child mental health problems

- **Individual child characteristics:** temperament; neurobiological factors (including stress regulation mechanisms); neuropsychological and neurophysiological factors (including brain structure and functioning); information processing and social cognition.
- **Family-level factors:** heritable influence (including gene–environment interplay); prenatal and perinatal influences; parenting; attachment; family structure and functioning; family poverty and disadvantage; abuse and neglect.
- **Influences beyond the family:** peers; schooling and education; neighbourhood; wider social influences; life events. These may have direct impacts on parents and children, or moderate other patterns of influence so that, for example, parenting is more challenging in some social contexts than others.

Genetic influences

- Many mental health problems run in families; genetic factors contribute to these effects.
- Although biological markers have not always been established, some disorders (such as ADHD) appear to be highly heritable, while others (such as many anxiety disorders) show less strong genetic effects.
- New genetic influences come on stream across development.
- Most heritable influences on mental health problems seem likely to stem from multiple genes, each of small effect.
- Gene–environment interplay is important: genetic factors may affect susceptibility to environmental risks, or influence risk exposure.
- Epigenetic mechanisms (such as DNA methylation) are responsive to environmental influences.

See Thapar, Pine, Leckman, Scott, Snowling and Taylor (2015) *Rutter's child and adolescent psychiatry* (6th ed.) for more information on risk factors and genetic influences.

Box 2.7 Gaps in research: Why is adolescence such a risky period for the onset of anxiety and mood disorders?

There are a number of hypotheses about why anxiety, panic and depression start to emerge in the teens, but we are not absolutely certain. This is partly because experimental studies are extremely hard to do with such sensitive topics. We have to make assumptions from cross-sectional data that cannot tell us about causality, or try to unpick the picture from longitudinal studies which might have been designed to address rather different research questions; but the suggestions include:

- The teenage years see an increase in stress as young people face educational pressures.
- The transition to being an autonomous adult is also potentially stressful.
- Peer pressures can ratchet up the anxiety levels, particularly perhaps for young women.
- Adolescent brains are still undergoing development and perhaps some aspect of the structural changes makes the teen brain particularly susceptible to mood changes.

Why is it important to have good information about mental health problems in young people?

As we have seen, mental health problems in children and young people are common. Undoubtedly they cause distress, both for the individual and also their family. In some cases, such as depression and anorexia, they may lead to death. In fact over half of deaths for those aged 15–19 are attributable to external causes including suicide and violent deaths, transport injuries, drowning and fire, and many of those who die from suicide have not had contact with mental health services (Wolfe, Macfarlane, Donkin, Marmot, & Viner, 2014). There is considerable continuity between childhood and adult problems (Jones, 2013). As we stated at the outset, it has been estimated that half of all lifetime cases of psychiatric disorders start by age 14, and three-quarters by age 24 (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005), and some estimates suggest the majority start before age 18 (Kim-Cohen et al., 2003). As a result of both their commonness and their links to adult health, mental health problems are a major contributor to the global burden of disease (Whiteford et al., 2013) and untreated problems are likely to be very expensive for health services both at the time of diagnosis, but also as young people grow into adulthood. Drawing on British national survey data, Snell et al. (2013) estimated that the additional health, social care and education costs associated with child psychiatric disorders totalled £1.47 billion in 2008, mostly relating to costs borne by the education sector.

Untreated mental health problems obviously also have a large cost for the individual. In a recent analysis of the economic impacts of youth mental health, Knapp et al. (2016) analysed data from the 2000 Adult Psychiatric Morbidity Survey and found that young people aged 16–25 with mental health issues were significantly more likely to be not in employment, education and training than their peers, and to be almost twice as likely to be on welfare benefits.

Yet mental health problems, as is set out more fully in Chapters 4 and 5, are treatable. The National Institute for Health and Clinical Excellence (NICE) provides a range of pathways and advice for tackling mental health in children and young people, including detailed information on treating depression in people under 18 (National Institute for Health and Clinical Excellence, 2005).

Mental health services for children and young people

Improving mental health outcomes is clearly on the international agenda. In 2013, the World Health Organization launched its Mental Health Action Plan 2013–20, with targets including a 20 per cent increase in service coverage for mental health problems, and a reduction of 10 per cent to suicide rates (WHO, 2013). The mental health of young people is subject to considerable policy discussion in the UK at the time of writing, partly as a result of the House of Commons Health Committee report on the topic in October 2014, and the government report *Future in mind*, published in 2015 following the work of the Children and Young People's Mental Health Taskforce (Department of Health, 2015). There is a consensus that services are not always available when and where they are needed. There is considerable emphasis on the importance of all kinds of service providers in this, not simply statutory CAMHS but also including social care, the voluntary sector, schools, colleges and universities.

What's available?

Other chapters in this book deal more fully with treatment options for child and adolescent mental health problems, but in the context of this chapter it is useful to provide a brief outline of what is available and some of the issues as they currently stand. In the UK, child and adolescent mental health is dealt with by a wide range of different professionals in different settings. Traditionally these have been ordered into 'Tiers' to help us conceptualize them:

Tier 1: universal services provided by non-specialists such as primary care workers and school nurses

Tier 2: specialized mental health workers offering support in the community, including, for example, working in GPs' surgeries and voluntary sector providers

Tier 3: specialist mental health professionals working in multidisciplinary teams based in a local clinic: what is often referred to as CAMHS (child and adolescent mental health services) although CAMHS is wider than just Tier 3

Tier 4: specialized day and inpatient units.

Wolpert et al. (2015) have suggested a new way to conceptualize this range of services which focuses more on the kinds of inputs that individuals will need. Their 'Thrive' model identifies five needs-based groupings – the 'thriving' majority who need no external help and have no, or very minimal, mental health difficulties; a group who can, or choose to, manage their difficulties with minimal external support; people who are getting goal-focused help and intervention; people getting more extensive treatment including inpatient services; and people who need risk management and crisis response but who, for a multitude of reasons, could not make use of active change interventions.

NICE provides the overarching guidance on how to treat mental health problems, and has distinct treatment pathways for those under 18 for treatment of depression and anxiety, for example. These guide the interventions on offer, and essentially suggest 'talking' treatments should always be the first line of intervention with this age group, with recourse to medication only alongside a talking treatment or if other options have failed. For example, statutory CAMHS will usually offer a range of interventions including a course of cognitive behavioural therapy, art therapy, child psychotherapy or family therapy, as well as medication.

The 'treatment gap'

At the time of writing there are no national datasets in the UK that tell us how many children and young people are seen for mental health problems in different parts of the health system, and there is also a lack of data on services provided by others including, for example, school counsellors and voluntary sector services in the community. The majority of children with difficulties will initially be seen in primary care. General practitioners (GPs) are often the first port of call for families facing difficulties with their young children and teenagers. Training in child and adolescent mental health is not part of the compulsory GP training programme and so the expertise of the family doctor will vary.

The options for GPs for onward referral are also fairly limited. The statutory CAMHS have limited capacity and high thresholds; it is often the case that only

children in crisis will meet the criteria for assessment and treatment. The NHS estimates that 1,400 per 100,000 of the population aged 0–19 will be referred to CAMHS (NHS Benchmarking Network, 2013). Specialized inpatient beds are extremely limited, with approximately 1,400 across the whole of England.

As we have suggested that at least 10 per cent of the adolescent population (and around 5 per cent of the younger child population) will have mental health symptoms that are of a level that warrants treatment, there is clearly a fairly substantial 'treatment gap'. It has been estimated from a large national survey that over half of 12–15 year olds with mental health issues have no contact with services for these problems, and that this gap is wider for adolescents and young adults than any other age group (Knapp et al., 2016). In a survey of 3,750 young people aged 12–16 in UK secondary schools, only 5 per cent of those at high risk of depression or self-harm had seen specialist CAMHS in the previous six months. Among those with probable depression, 79 per cent had seen their GP and 5 per cent had seen specialist mental health services in the preceding year (Sayal, Yates, Spears, & Stallard, 2014).

Linking up NHS provision with others such as voluntary sector youth information, advice and counselling services – although critical – can also be a challenge. Any discussion about meeting the need for mental health services among children and young people needs to take into account this wider realm of provision, including the voluntary and independent sectors. These deal with a significant proportion of young people who do not meet the threshold for CAMHS.

Conclusion

Child mental health is a big issue, both in terms of the extent of the difficulties experienced by significant proportions of the child and adolescent population, but also because of the challenges posed in trying to meet need within existing services, both statutory and beyond. Mental health is as significant as physical health in terms of long-term outcomes and impacts on unfolding lives, yet investment in mental health lags a long way behind physical health services. Ensuring we have up-to-date, robust epidemiological data is a critical part of mapping need, planning interventions and tracking time trends.

Summary of key findings



- Mental health disorders are common in children and adolescence, with at least one in 10 experiencing difficulties at any given time.
- Common mental health problems include behaviour disorders, anxiety and depression, and attention deficit and hyperactivity disorders. These can be distinguished from the ordinary ups and downs of childhood or adolescence.
- Formal diagnoses are useful but do not capture all that we know about problems young people face; many reach services with complicated needs for support but without falling neatly into diagnostic criteria.
- A number of different agencies and providers provide interventions and treatment, including both statutory health services but also voluntary sector organizations and others working in schools, the community and primary care.
- There is evidence of a substantial 'treatment gap', with perhaps more than half of those needing treatment not getting it.

Recommended reading



- De Los Reyes, A., Augenstein, T., Want, M., Thomas, S., Drabick, D., Burgers, D., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, 141(4), 858–900. A helpful meta-analysis and evaluation of the validity of the multi-informant approach in clinical child and adolescent assessment.
- Department of Health. (2015). *Future in mind: Promoting, protecting and improving our children and young people's mental health and wellbeing*. London: DH. Report with recommendations from a taskforce co-chaired by NHS England and the Department of Health, which spells out the situation at the time and includes a number of proposals for improving children and young people's mental health services.
- Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2005). *Mental health of children and young people in Great Britain, 2004*. London: Office for National Statistics. Report of findings from the second (2004) national survey of the mental health of children and young people in Britain.
- Goodman, R., & Scott, S. (2012). *Child and adolescent psychiatry* (3rd ed.). Chichester: Wiley-Blackwell. Accessible child and adolescent psychiatry textbook for clinicians, trainees and students, with sections on assessment, individual disorders, risk factors, and treatment/prevention.
- Hagell, A., Coleman, J., & Brooks, F. (2015). *Key data on adolescence 2015*. London: Association for Young People's Health. See particularly Chapter 6 on mental health and Chapter 8 on service use. Compendium of publicly available statistics on young people's health, including downloadable spreadsheets containing the original data, and an accompanying set of PowerPoint slides for use in presentations (available on the 'Key Data on Adolescence' page on AYPH's website, www.youngpeopleshealth.org.uk/key-data-on-adolescence).
- Jones, P. B. (2013). Adult mental health disorders and their age at onset. *British Journal of Psychiatry*, 202, s5–s10. Review of evidence that many adult mental health disorders begin by adolescence, and discussion of implications for service provision.
- Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 35–42. Brief review of developmental trends in depressive disorders; patterns of comorbidity; risk factors; and efficacy of current treatment approaches.
- Merikangas, K. R., Nakamura, E. R., & Kessler, R. C. (2009). Epidemiology of mental disorders in children and adolescents. *Dialogues in Clinical Neuroscience*, 11(1), 7–20. Review of the rates of mental disorders in children and adolescents from recent community surveys across the world.
- National Institute for Health and Clinical Excellence (NICE) (2005). *Depression in children and young people: Identification and management*. NICE Guidelines CG20 Retrieved from www.nice.org.uk/guidance/cg28 The NICE guideline on depression in children and young people, covering care pathways, what to expect from treatment, and information on the kinds of services on offer.
- Thapar, A., Pine, D., Leckman, J., Scott, S., Snowling, M., & Taylor, E. (Eds.). (2015). *Rutter's child and adolescent psychiatry* (6th ed.). Chichester: Wiley-Blackwell. Comprehensive textbook with sections devoted to conceptual issues and research approaches; influences on psychopathology; approaching the clinical encounter; and clinical syndromes.

Questions for reflection



- How has this chapter helped you to think about the difference between the ordinary ups and downs of adolescence and more formal diagnoses of mental ill health?

(Continued)

(Continued)

- What are the limitations in basing what we know about trends in child mental health on standard diagnostic categories?
- How confident are you that we know what the trends are in young people's mental health? what makes you less confident?

References

- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: APA.
- Angold, A., & Egger, H. L. (2007). Preschool psychopathology: Lessons for the lifespan. *Journal of Child Psychology and Psychiatry*, 48, 961–966.
- Angold, A., Erkanli, A., Copeland, W., Goodman, R., Fisher, P. W., & Costello, E. J. (2012). Psychiatric diagnostic interviews for children and adolescents: A comparative study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 51, 506–517.
- Arcelus, J., Mitchell, A., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Archives of General Psychiatry*, 68, 724–731.
- Bebbington, P. (1996). The origins of sex differences in depressive disorder: Bridging the gap. *International Review of Psychiatry*, 8, 295–332.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Brooks, F., Magnusson, J., Klemera, E., Chester, K., Spencer, N., & Smeeton, N. (2015). *HBSC England national report: Health behaviour in school-aged children: WHO collaborative cross national study*. Hatfield: University of Hertfordshire.
- Caspi, A., Houts, R., Belsky, D., Goldman-Mellor, S., Harrington, H., Israel, S., Meier, M., Ramrakha, S., Shalev, I., Roulton, R., & Moffitt, T. (2013). The p factor: One general psychopathology factor in the structure of psychiatric disorders? *Clinical Psychological Science*, 2, 119–137.
- Chorpita, B. F., Yim, L., Moffitt, C., Umemoto, L. A., & Francis, S. E. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: A revised child anxiety and depression scale. *Behaviour Research and Therapy*, 38, 835–855.
- Collishaw, S., Maughan, B., Goodman, R., & Pickles, A. (2004). Time trends in adolescent mental health. *Journal of Child Psychology and Psychiatry*, 45, 1350–1362.
- De Los Reyes, A., Augenstein, T., Want, M., Thomas, S., Drabick, D., Burgers, D., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, 141, 858–900.
- Department of Health. (2015). *Future in mind: Promoting, protecting and improving our children and young people's mental health and wellbeing*. London: DH.
- Goodman, R. (1999). The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. *Journal of Child Psychology and Psychiatry*, 40, 791–799.
- Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2005). *Mental health of children and young people in Great Britain, 2004*. London: Office for National Statistics.
- Grills, A. E., & Ollendick, T. H. (2002). Issues in parent-child agreement: The case of structured diagnostic interviews. *Clinical Child and Family Psychology Review*, 5, 57–83.
- Hagell, A. (2012). *Changing adolescence: Social trends and mental health*. Bristol: Policy Press.
- Hagell, A., Coleman, J., & Brooks, F. (2015). *Key data on adolescence 2015*. London: Association for Young People's Health.
- Hawton, K., Saunders, K., & O'Connor, R. (2012). Self-harm and suicide in adolescents. *Lancet*, 379, 2373–2382.
- Health and Social Care Information Centre (2014). *Provisional monthly hospital episode statistics for admitted care, outpatients and A&E data, April 2013–October 2013: Topic of interest – Eating disorders*. Leeds: HSCIC.

- House of Commons Health Committee (2014). *Child and adolescent mental health and CAMHS. Third report of session 2014–15*. London: House of Commons.
- Jones, P. B. (2013). Adult mental health disorders and their age at onset. *British Journal of Psychiatry*, 202, s5–s10.
- Kessler, R., Berglund, P., Demler, O., Jin, R., Merikangas, K., & Walters, E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 593–602.
- Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry*, 60, 709–717.
- Knapp, M., Ardino, V., Brimblecombe, N., Evans-Lacko, S., Immi, V., King, D., Snell, T., Murguia, S., Mbeah-Bankas, H., Crane, S., Harris, A., Fowler, D., Hodgekins, J., & Wilson, J. (2016). *Youth mental health: New economic evidence*. London: Young Minds and LSE PSSRU.
- Maughan, B., Collishaw, S., Meltzer, H., & Goodman, R. (2008). Recent trends in UK child and adolescent mental health. *Social Psychiatry and Psychiatric Epidemiology*, 43, 305–310.
- Merikangas, K., He, J., Burstein, M., Swanson, S., Avenevoli, S., Cui, L., Benjet, C., Georgiades, K., & Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: Results from the National Comorbidity Study – Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, 49, 980–989.
- National Collaborating Centre for Mental Health (2012). *Eating disorders*. Leicester: British Psychological Society.
- National Institute for Health and Clinical Excellence (2005). Depression in children and young people: Identification and management. NICE Guidelines CG20. Retrieved from www.nice.org.uk/guidance/cg28
- NHS Benchmarking Network (2013). *Raising standards through sharing excellence: CAMHS benchmarking report*. London: NHS BN.
- O'Connor, R., Rasmussen, S., Miles, J., & Hawton, K. (2009). Self-harm in adolescents P: Self-report survey in schools in Scotland. *British Journal of Psychiatry*, 194, 68–72.
- Pickett, W., Molcho, M., Elgar, F., Brooks, F., de Looze, M., Rathmann, K., et al. (2013). Trends and socioeconomic correlates of adolescent physical fighting in 30 countries. *Pediatrics*, 131, e18–e26.
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24, 335–344.
- Rutter, M., Moffitt, T., & Caspi, A. (2006). Gene-environment interplay and psychopathology: Multiple varieties but real effects. *Journal of Child Psychology and Psychiatry*, 47, 226–261.
- Sayal, K., Yates, N., Spears, M., & Stallard, P. (2014). Service use in adolescents at risk of depression and self-harm: Prospective longitudinal study. *Social Psychiatry and Psychiatric Epidemiology*, 49, 1231–1240.
- Simonoff, E., Pickles, A., Charman, T., Chandler, S., Loucas, T., & Baird, G. (2008). Psychiatric disorders in children with autism spectrum disorders: Prevalence, comorbidity, and associated factors in a population-derived sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47, 921–929.
- Snell, T., Knapp, M., Healey, A., Gugliani, S., Evans-Lacko, S., Fernandez, J., Meltzer, H., & Ford, T. (2013). Economic impact of childhood psychiatric disorder on public sector services in Britain: estimates from national survey data. *Journal of Child Psychology and Psychiatry*, 54, 977–985.
- Thapar, A., Pine, D., Leckman, J., Scott, S., Snowling, M., & Taylor, E. (Eds.). (2015). *Rutter's child and adolescent psychiatry* (6th ed.). Chichester: Wiley-Blackwell.
- Van der Ende, J., Verhulst, F., and Tiemeier, H. (2012). Agreement of informants on emotional and behavioural problems from childhood to adulthood. *Psychological Assessment*, 24, 293–300.
- Whiteford, H., Degenhardt, L., Rehm, J., et al. (2013). Global burden of disease attributable to mental and substance use disorders: Findings from the Global Burden of Disease Study. *Lancet*, 382, 1575–1586.
- Wolfe, I., Macfarlane, A., Donkin, A., Marmot, M., & Viner, R. (2014). *Why children die: Death in infants, children and young people in the UK Part A*. London: Royal College of Paediatrics and Child Health and National Children's Bureau.
- Wolpert, M., Harris, R., Hodges, S., Fuggle, P., James, R., Wiener, A., McKenna, C., Law, D., York, A., Jones, M., & Fonagy, P. (2015). *Thrive elaborated*. London: Evidence Based Practice Unit CAMHS Press.
- World Health Organization (2010). *International classification of diseases* (10th ed.). Geneva: WHO.
- World Health Organization (2013). *Comprehensive mental health action plan 2013–2020*. Geneva: WHO.