

Women and Equalities Committee inquiry: mental health of men and boys

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- **Apart from greater muscle power *males are biologically the weaker sex.* Throughout life *mortality in males, including from suicide, exceeds that in females.***
- **Male vulnerability is most evident in the relative immaturity of the male fetus and the infant boy, both of whom are *far more likely to suffer long lasting developmental harm when the mother experiences significant stress or depression during pregnancy and in the early months of her baby's life.***
- **To *focus only on 'mental health' in a child is artificial and misleading.* Decades of scientific research have shown how maternal perinatal stress and illness *affects the child's development as a whole* – brain and body, learning and emotion, intimate and social skills – because these systems are interconnected.**
- **The upbringing and education of boys is hampered by a widespread misunderstanding of their strengths and weaknesses. *While the concept of masculinity includes resilience, in truth the female has more of it.***
- **Despite what is now known of the risks of not intervening, *health services for pregnant women and new mothers still miss the majority of women who could be helped.* The cost in human suffering – even in lives – and to the nation as a whole is huge. Boys take the greater hit, as the science shows.**

Males die, females suffer

1.0 the fragile male

While physically stronger **the human male is, like males in other mammalian species, in almost all other respects biologically the weaker sex.** Even before birth there is a significantly greater mortality in males. Almost anything that can go wrong in utero is more likely to harm the male fetus.

“The male fetus is at greater risk of death or damage from almost all the obstetric catastrophes that can happen before birth. Perinatal brain damage, cerebral palsy, congenital deformities of the genitalia and limbs, premature birth, and stillbirth are commoner in boys”¹

“Very low birthweight boys had a significantly higher mortality and more postnatal complications than girls.”^{2,3}

The pattern of greater mortality persists throughout the lifespan. At every age from fetus to old age, male mortality from all causes is greater than female. This includes **rates of suicide which are always much higher in males of any age.**

Males die, but they are also responsible for **more violence** than females (though the gap is narrowing⁴) and are more often the victims of homicide⁵.

1.1 Long term effects on male development of maternal perinatal stress. What is still not sufficiently well known in policy circles is the decades of scientific research showing that **the male child of a woman who is chronically stressed or depressed in the perinatal period is significantly more likely than a girl to have developmental disorders.** These effects last long after mother’s depression has lifted, **right into their teens and probably beyond.**

1.1.1 A stressed person is not necessarily easy to help, or even eager to ask for it. A common misconception amongst non-mental health clinicians – and indeed policymakers – is that ‘perinatal stress’ is an uncomplicated mental problem that can be picked up on a [questionnaire](#) or simply by asking how the woman is feeling. It may be obvious from her manner that a woman is anxious or frightened but some will *conceal their despair out of shame*, and others develop attitudes and symptoms that conceal their problems *both from themselves and from others*. A troubled person may be defensive, hostile and self-righteous, which does not encourage help-giving.

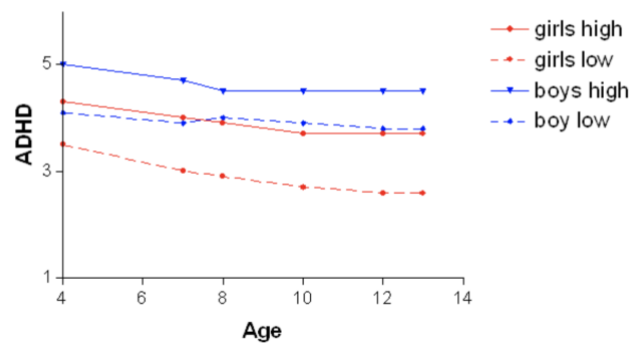
1.1.2 A proper assessment of women at risk must include a psychosocial history - how much was she cherished and protected by parents/caregivers. Robust research shows that **“a woman’s experience of childhood maltreatment increases the risk of her developing depression in pregnancy”.**⁶

Without in-house professional support from mental health and social services, midwives and obstetricians will fail to pick up all the women in need and at risk (see 3.1).

1.2 Effect of maternal stress on fetus: “prenatal maternal mood has a direct and persisting effect on her child's psychiatric symptoms” “If a mother is stressed while pregnant, her child is substantially more likely to have emotional or cognitive problems, including **an increased risk of attentional deficit/hyperactivity, anxiety, and language delay**. These findings are independent of effects due to maternal postnatal depression and anxiety”.⁸

This graph shows **higher rates of attention deficit hyperactivity disorder (ADHD) in sons of mothers with prenatal anxiety than in their daughters:**

ALSPAC Antenatal anxiety at 32 weeks and child ADHD-SDQ



Glover 2010⁹

1.3 Effect of postnatal maternal: anxiety and depression after the baby is born has “a differential effect on boys”¹¹. Postnatal depression is not so distinct from antenatal stress; “antenatal anxiety occurs frequently, overlaps with depression and increases the likelihood of postnatal depression”¹⁰ but of course there is now a hugely demanding new person in the frame.

1.3.1 New mothers who are depressed are typically unsupported either by their own mothers or partners, or both. ‘Support’ is usually understood to mean active hands-on help but it can also be the confidence in the mother’s mind that she is loved and wanted by family or friends. Both are reduced in depression, partly due to the woman’s state of mind. She may also be in a poor social condition, without secure housing or income. **Because she is distracted – even afraid – the mother’s ability to be attuned to the infant is reduced.** Satisfying interactions with a baby are intuitively timed to the microsecond, but a depressed mother misses the baby’s cues.

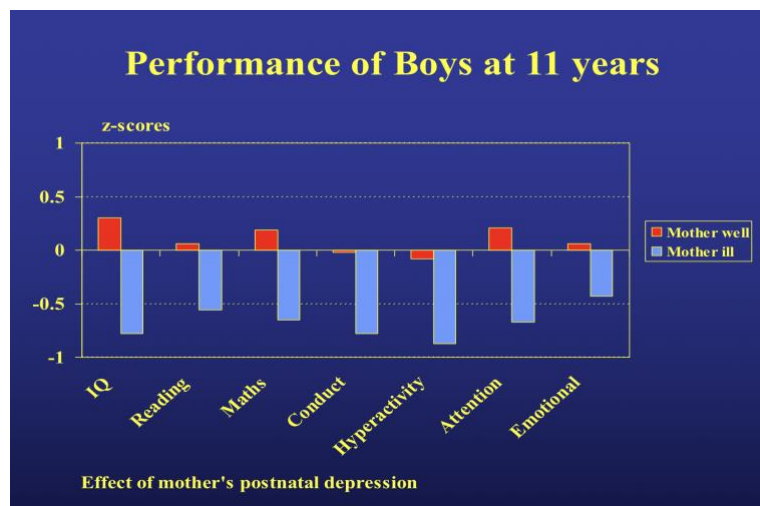
*“maternal depression [has] a differential effect on the early interactive behavior of boys and girls, with the **boys displaying less pleasure during the interaction and the depressed mothers in turn being more affectively negative with their sons than their daughters.**”¹¹*

As a result the infant’s brain and body systems develop along a different pathway, which evolution has prepared him for in the event of lack of attuned care. He is less able to regulate himself but **learns to manage on his own, without being looked after.** This has long term, negative effects on his relationships with others.

1.3.2 Even years after mother's depression has lifted her son's development is still compromised. These boys tend to be more dreamy, restless and hard to manage in primary school classes: ***“only in boys was there evidence for the existence of a sensitive period for the development of hyperactive symptoms, and to a lesser extent, conduct disorder symptoms”***¹² and continue to show significant academic effects into the teens.

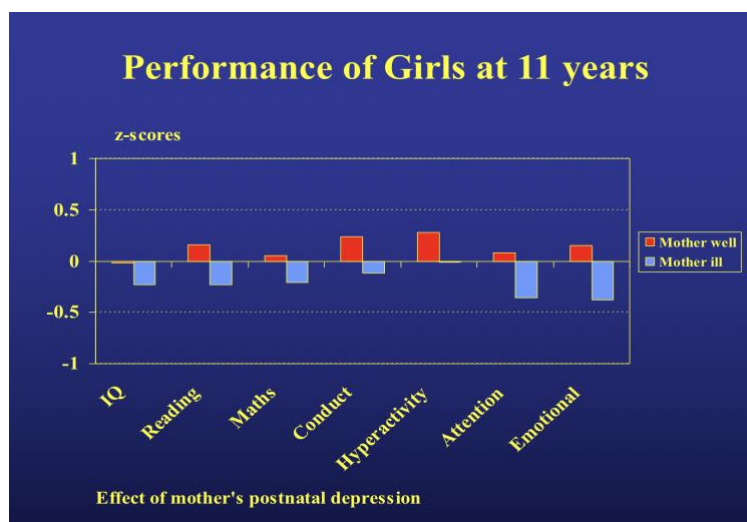
“Boys, but not girls, of postnatally depressed mothers had poorer GCSE results than control children. This was principally accounted for by effects on early child cognitive functioning, which showed strong continuity from infancy”¹³.

This graph shows **the long term effect of postnatal depression on boys' behaviour, emotions and their capacity to learn:**



Hay, Pawlby et al 2001¹⁴

Compare the *far less significant impact of mother's postnatal depression on girls' development :*



Hay, Pawlby et al 2001.

1.3.3 The effect of maternal perinatal stress creates a **syndrome of poor self-regulation in boys**. The boy cannot hold himself together, which affects his capacity to learn. This tendency is evident already in the first months of life: *“the capacity for self-regulation may be at the base of gender differences in infant emotional expressivity”*¹⁵

1.4 Severe maternal stress can kill the male fetus.

The biological vulnerability of the male is strikingly demonstrated by the impact of major disasters such as earthquakes on the sex ratio of babies born to women who were pregnant at the time. Women who were pregnant in New York on 9/11 had **statistically significantly fewer male births soon afterwards**.^{16,17} Because they are not so resilient the shock kills more male than female fetuses. This is an extreme example of the fragile male.

1.5 Deaths from all causes in boys of all ages exceed those of girls, with a highly significant social class gradient. The social gradient itself is obviously not biological, while **lethal male vulnerability to inequality** clearly is.

This graph shows that **more than twice as many boys in the lowest social class die compared to those in the highest social class.**

Child health statistics review, 1998

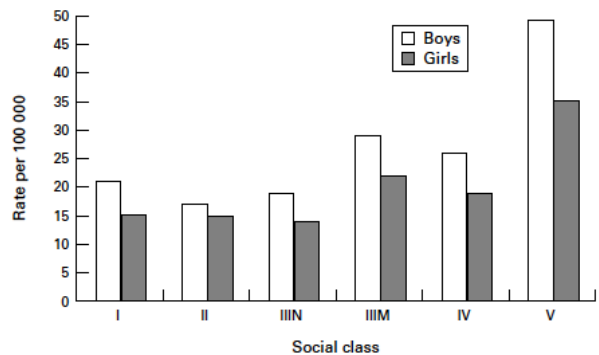
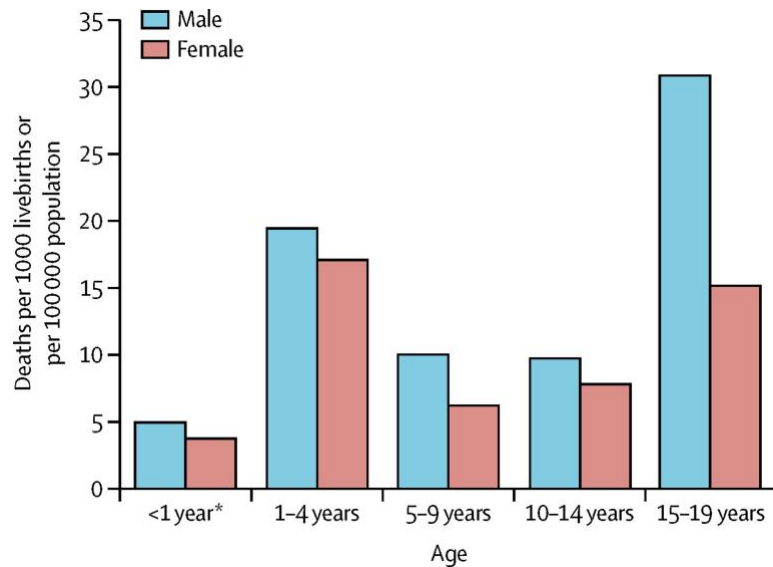


Figure 3 Mortality rates of young people aged 1–15 years by sex and social class of parents, England and Wales, 1991–93. N, non-manual; M, manual.

*Platt, 1998*¹⁸

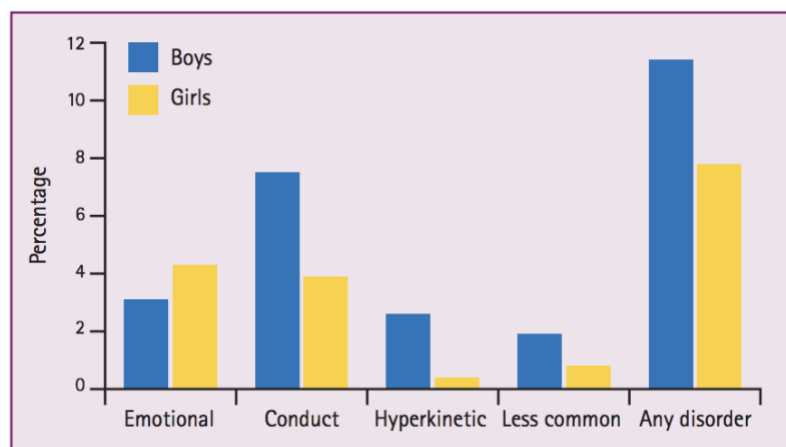
1.5.1 Teenage boys are much more likely to die than girls. Regardless of social class, in every age group male deaths exceeds female ones, with the greatest difference in young people during the teens. Accidents play a part in this difference.



Sidebotham et al 2014 ¹⁹

1.5.2 The excess of accidents amongst males is partly evolutionary, and partly cultural. Where competition for mates is the norm in mammals the male has probably evolved to take greater risks. Macho attitudes can encourage bravado on top of that. This is one of several ways in which *biology and culture conspire to undermine the health of boys and men.*

1.6 An excess of mental disorders in boys is evident throughout childhood. Given the enormous differences in mortality and morbidity it should be clear that simply **to focus only on ‘mental health’ in a child is artificial and misleading.** **Maternal perinatal stress or disease affects the child’s development as a whole – brain and body, learning and emotion, intimate and social skills – because these systems are all interconnected.**



Prevalence of mental disorders in children aged 5–16 years Green et al, 2005 ²⁰

1.6.1 Hyperactivity/ADHD, learning difficulties and conduct disorder are all commoner in boys. Hyperactivity is a serious and well publicised problem but it affects a relatively small minority of children compared to other emotional and behavioural disorders.

1.6.2 As with perinatal stress in mothers, so also child mental disorders are rarely discrete qualities. The majority of children referred to CAMHS have so-called 'co-morbid' disorders, which simply means that they have a number of **interrelated developmental and psychosocial problems**. Nor are these acute illnesses, like an infection. The majority of child mental problems are chronic, more like asthma or diabetes, and the treatment is correspondingly complex.

1.6.3 Most mental conditions have a genetic predisposition but **it is the developmental i.e. family environment that crucially influences the degree of clinically significant symptoms**, and where social and clinical intervention is possible. (Autism is also commoner in boys. There is a stronger genetic cause, but susceptible children are more vulnerable to perinatal harms.)

1.6.4 **Although girls begin to predominate in adolescent mental health services, boys continue to suffer but more often present in other settings such as special education (eg pupil referral units), the juvenile courts or on a pathologist's slab after a fatal accident or suicide.**

1.6.5 A contrasting finding is that the **daughters of women with depression that persists long after the perinatal period have suicidal feelings more frequently than their sons.** *"a higher percentage of females report suicidal ideation across all classes of maternal depression"*²¹. The correlation of numbers 16 year old girls with suicidal ideation with the severity of their mothers' depression is shown in the graph below:

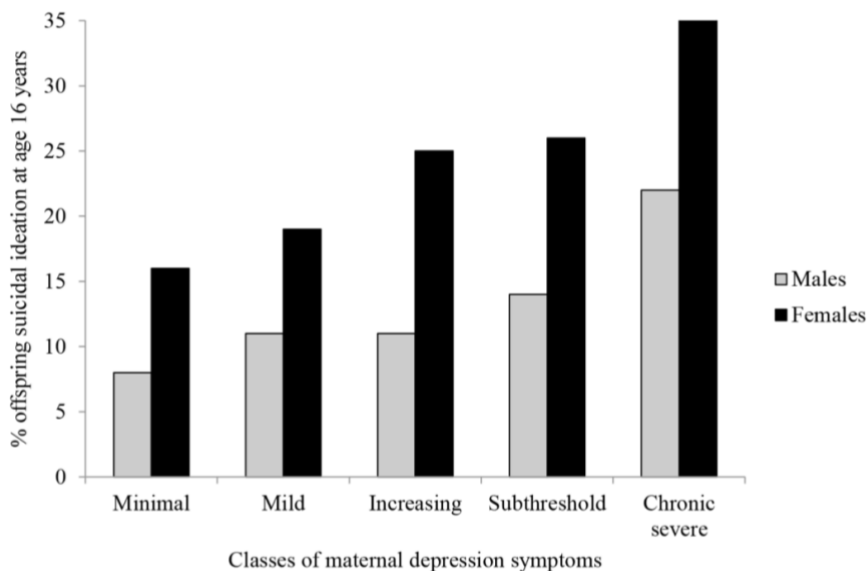
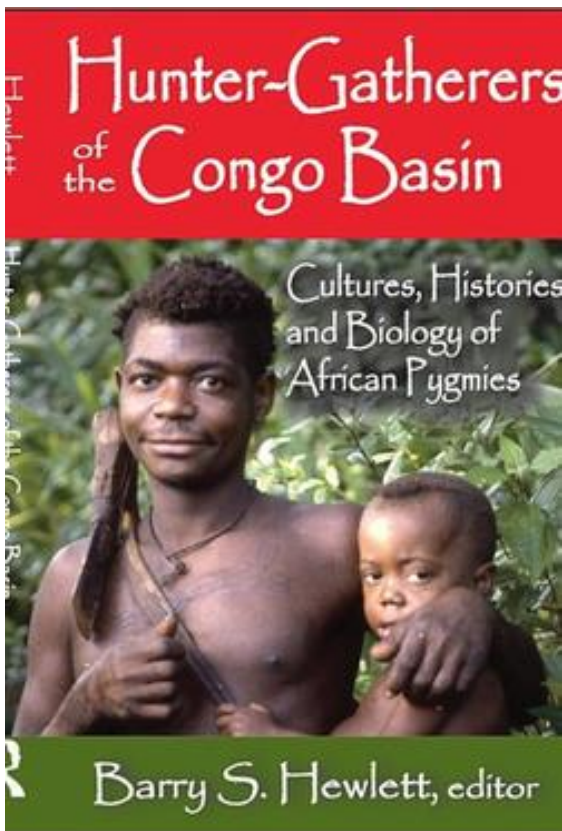


Fig 3. Percentage of male and female offspring with past year suicidal ideation at age 16 years for each of the classes of maternal depression symptoms. Imputed $N = 10,559$.

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2.0 Social superiority of the male

In almost all human societies the male is privileged over the female. This is neither natural nor necessary, and is not good for men's (or women's) wellbeing. Because male dominance has been established almost everywhere for so many thousands of years, few people are aware *it does not have to be that way*. For example, though quite unusual, there is still a group of hunter gatherers living today where the mother hunts while the father looks after the baby.



[published by Routledge 2014](#)

The fact that this is happening not out of ideological choice but *because it has worked for them for countless generations*, means that **we cannot assume that the gender roles we have are fixed**. Of course this assumption is now widely challenged, but our argument should be based not only in human rights but *also on our evolved human nature*.

2.1 In contrast to children in surviving hunter gatherer societies²² the gender differences we are familiar with in the modern world are imparted early in modern children's lives. This adds to the disadvantage that the tiny boy already has.

2.1.1 Healthy infant boys are emotionally and physiologically less well-regulated and require more parental help to settle than girls¹⁵ They display more emotions, yet tend to stifle them as they are socialized into current versions of masculinity²³.

2.1.2 Suppression of empathic emotion in boys is established early in childhood. *"When exposed to the distress of others, young boys are less sympathetic than girls. A group of six year old*

girls and boys were listening to the recorded sound of a crying baby. Many more girls than boys spoke kindly to what they assumed was a real infant, while **more than twice as many boys simply turned the speaker off. Tracings of heart rate variability suggested that the boys were more anxious; they could not tolerate the infant's distress**"²⁴

2.1.3 Alexithymia - an inability to experience or express emotion - is commoner in males. In young men, "**difficulties with identifying emotions and communicating emotions are associated with maladaptive nutritional habits, a sedentary lifestyle, and substance abuse**"²⁵

"Masculinity, fear of intimacy, and alexithymia significantly accounts for the observed variance in **men's negative attitudes towards seeking professional psychological help**"²⁶

2.1.4 The concept of the masculine as superior to the feminine is a historical invention. When humans began to domesticate plants and animals around 10,000 years ago they also domesticated women. Female power over male desire, and over the infant boys they had given birth to had to be reined in. This created a new model of maleness that was replicated in creator gods who rapidly replaced prevailing mother goddesses, putting the father at the top. "**The institution of fatherhood was born out of an envious attack on mothers**".²⁷ Fear of their greater power is an ingredient in men's violence against women.

2.2 Suicide risk due to masculine 'pride'. Male superiority is not good for men's health. The tendency of males to be compulsively self-reliant and less understanding of – even to feel contempt for – their own emotions means that they are often reluctant to ask for help. **It is difficult to ask for help if you are ashamed of doing so.** This is one of the factors behind the association of male suicide with unemployment and insecurity and with the far greater prevalence of male suicide the world over.

2.2.1 As long as a modern man's self-esteem depends heavily on his assumed superiority in the world – such as having more money or a more powerful job – then without these he feels disqualified.

The graph below shows clearly how unemployment in the great depression of the 1930s was associated with the highest rates of male suicide ever recorded. (It also shows how *being at war brings suicide rates down*; there is greater social cohesion as the country is united against a common, external enemy, and many more men can join the armed forces.)

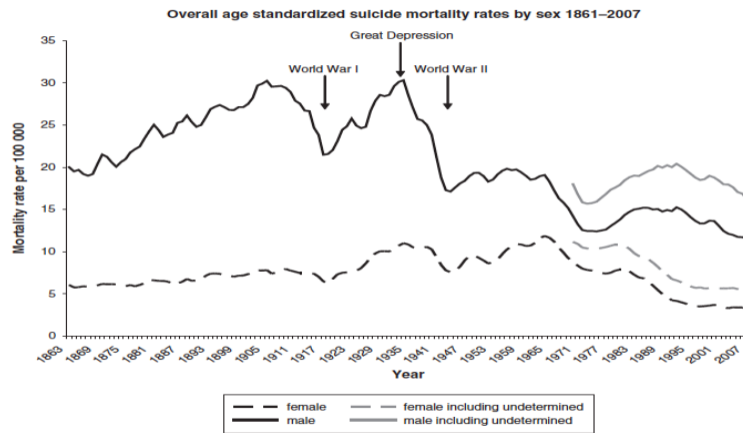


Figure 1 Age standardized suicide rates for ages ≥ 15 years in England and Wales (3-year moving averages) 1861–2007

Thomas & Gunnell, 2010²⁸

Female resilience to social stressful social changes is perfectly illustrated in this graph.

2.2.2 There is also huge excess of suicides in teenage boys and younger men

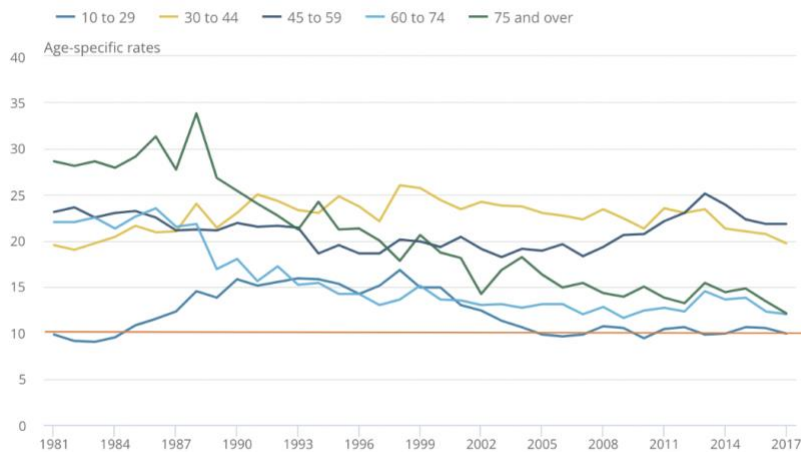
Suicide rates in young men increased rapidly in societies where neoliberal policies took hold, such as in New Zealand and UK. For instance **in UK in 1971 male rates of suicide among young men aged 15 -24 were double the rates for females in the same age range. By 1981 suicide amongst young men had doubled again²⁹, yet the rates amongst young women *did not change at all.***

Since a recent peak around 1997 male suicide rates declined and in the youngest age group (10-29) are now fairly stable. However there is news of further increases³⁰ which is rightly ringing alarm bells about the precarious lives of the generation born in the 21st century. **While teenage girls take overdoses far more often than boys³¹, boys and young men are much more likely to kill themselves than girls and young women.**

ONS data up to 2017 show slight declines in suicide by people aged between 10 and 29 but note that **the suicide rate amongst males is three times greater in males – 9.9/100,000 in males compared to 3.2/100,000 in females. If these graphs were superimposed there would (since 1990) be barely any overlap between male and female suicide rates.**

I have inserted a red line in each graph at 10 suicides per 100,000 to demonstrate that.

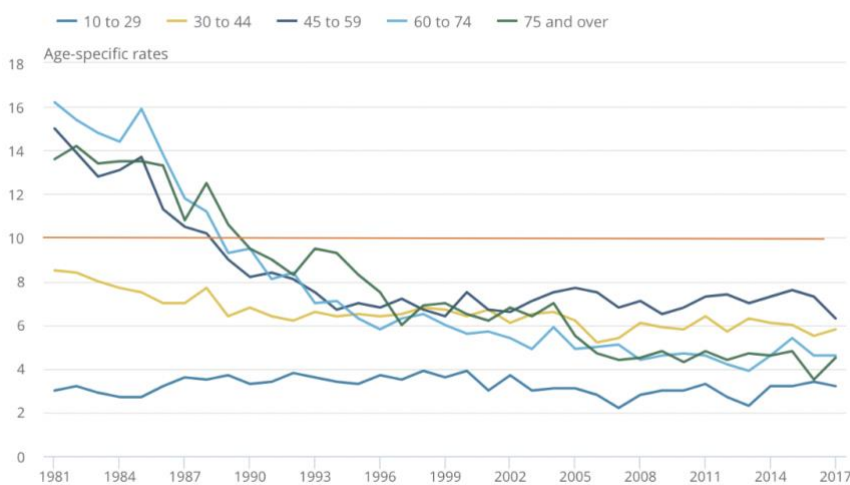
Figure 6: Age-specific suicide rates by broad age groups, males, UK, registered between 1981 and 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

[Suicides in the UK: 2017 registrations](#) ONS, 2017

Figure 7: Age-specific suicide rates by broad age groups, females, UK, registered between 1981 and 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

[Suicides in the UK: 2017 registrations](#) ONS, 2017 ³²

2.2.3 The development of Andy’s Man Clubs is encouraging. [‘Our goal is to halve the male suicide rate’](#) (This has nothing to do with the most famous Andy - namely Murray - a heroic version of modern masculinity who respects women, and is not afraid to cry.)

3.0 Universal perinatal intervention to reduce developmental disorders

The syndrome of poor regulation in boys could be reduced through a national commitment to **comprehensive universal perinatal health and social services based on front line multidisciplinary midwifery teams**, where complex needs can be assessed.

If the mass of scientific knowledge of [perinatal risk](#) gathered over the last four decades were better understood, early years policy would ensure that **every pregnant woman and her family (however defined) would be routinely assessed and preventive advice or treatment provided at once, rather than waiting for more serious symptoms to arise.** (Though the female is more resilient, of course this would also have a positive impact on the development of girls.)

3.1 When available at all, current early intervention perinatal services tend to be organised on the basis of clearly defined diagnoses in pregnant women and new mothers. This means waiting until some deterioration has taken place, and still risks neglecting the more complicated psychosocial states – often camouflaged behind physical symptoms or dismissed pejoratively as ‘personality disorders’ – which can create similar or even worse long term developmental harms³³. **Many mothers (and their partners) in need are overlooked in this way. “Much childhood adversity could be reduced if parents who were struggling could get access to therapies that have been shown to change minds”³⁴.**

3.1.1 Unless midwifery teams have dedicated mental health, social work and other staff on hand, hard-pressed midwives will be left stranded with worried or worrying patients and have little guidance on where to send them for extra help:

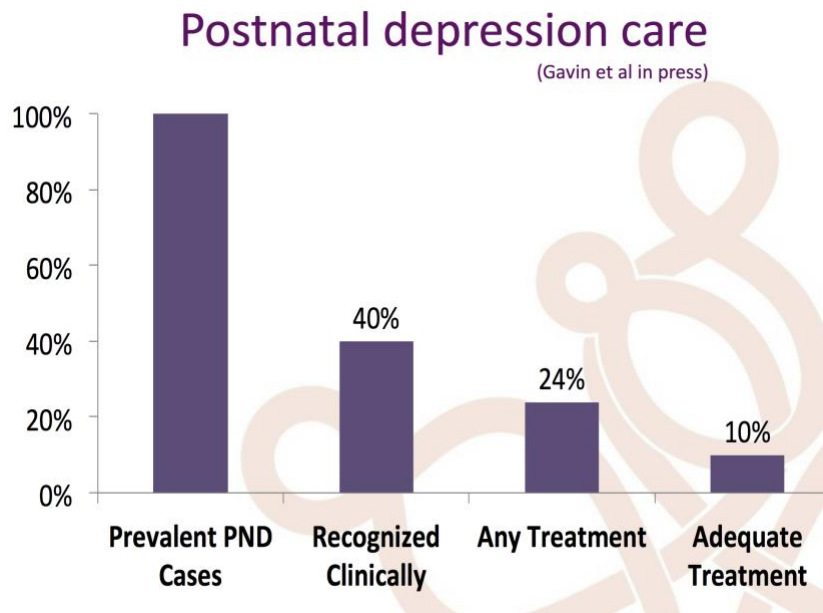
“how are they to know precisely which social, medical, or mental health provision is correct for the pregnant woman and pending offspring? Moreover, *the patient's experience might not be as compartmentalised as the services around her. She could be anxious or afraid yet have somatic symptoms, or physically ill and present with disturbed mood.*”³⁵

It is poor practice to wait until a new parent becomes demonstrably ill before allocating her to the appropriate pathway, which may not even exist or, if it does, has a waiting list.

3.1.2 Thankfully perinatal mental health is no longer ignored but there is instead a confusing cacophony of **competing interventions with no place in policy to coordinate them.** *“In early intervention relationships have a more significant effect than techniques, a nightmare for those who commission since the person will be more important than the procedure and those who are good at making therapeutic relationships will be refractory to policies.”³⁶*

3.1.3 At this unique opportunity in the life cycle **our still-envied NHS should be able to capture far more vulnerable people in the preventive net than it currently does.**

“The perinatal period is the most efficient time for detecting depression in women, yet only 40% are recognised clinically, 24% get any treatment, and 10% get adequate treatment”³⁷



cited by Gregoire (2016) [Working together to improve the lives of mothers and their infants](#)

3.1.4 The select committee's inquiry can help by confirming the principle on which intervention is initiated, namely [by careful multidisciplinary assessment](#), for which **tick boxes and checklists can never be an ethical substitute.**

3.2 Parental leave pays dividends in quality of life, and life itself. Right from the start parents need time to get to know their babies, of either sex, before getting back into their work or careers. There is increasing evidence to show that **the more mothers are paid to care for their infants, the fewer of these children die: "a 10-week extension of paid leave could reduce post-neonatal deaths by 3.7–4.5% and could decrease child mortality by 3.3–3.5%."** ^{38, 39} [The research does not measure paternal leave because there was not enough to measure]. Infant mortality is merely the tip of an iceberg of developmental damage, almost always suffered more by male than by female children.

3.3 The fragility of fatherhood (in brief) Culture and biology conspire to undermine fathers. Decades of research show that children thrive best when their fathers are more nurturing⁴⁰ than disciplinarian, as the prevailing patriarchal model had prescribed. Yet even now there is little encouragement from employers or [health](#) or social services to include them. This is despite sporadic well-meaning initiatives by progressive employers and innovative public services.

3.3.1 In addition to two weeks paternity leave, shared **parental leave** was introduced to UK in 2015. In comparison with Nordic countries⁴¹ British fathers tend not to get, nor to use, paternal leave. Research in 2015 suggests that *"the shared parental leave scheme is failing, with financial implications and strict eligibility criteria creating barriers for many new parents"*.⁴²

There are some interesting studies suggesting that fathers may have a special bond with boys⁴³ but their main task should be to be as involved in parental care of all their children as much as possible, right from the start. **There is no doubt that men who get to know their babies have a better**

and more durable relationship with the child, an opportunity enhanced by paternal leave.⁴⁴ This is brought into relief if the parents later separate.

3.3.2 The fact that women are doing better in many jobs these days (see education, *Appendix I*) is not necessarily encouraging to men. Those men who do not feel they have permission to be tender with their children – whatever they actually feel – are at a double disadvantage. They can neither bring home the bacon nor manage their young children competently.

3.3.3 All children require several caregivers. Compared to the newborn of other mammalian species a human baby is the most immature of all and **cannot be cared for by one person alone**. Of course care may be shared with other women besides the mother, such as her own mother, a female partner⁴⁵, childminders, friends or nursery nurses. The key to successful childrearing is **successful collaboration between a small number of devoted caregivers**⁴⁶. *“Infants with several attachment figures grow up better able to integrate multiple mental perspectives”*⁴⁷

3.3.4 Because even toddlers know how babies are made, fathers are uniquely important to their offspring. But in modern western cultures he is no longer entitled to take a leadership role in the child’s upbringing greater than the mother. Research shows that children require – *demand* – that the people looking after them can deal with their differences and collaborate in protecting and rearing them: *“Infants exhibiting more advanced triangular capacities belonged to families showing evidence of better coparental adjustment.. infants begin in the earliest months of life to grasp relationships and to exercise group sociability”*⁴⁸

3.3.5 The difference that makes a difference: *“Boys can become fathers if they are encouraged to do so, but it is a political as well as a private matter. There is nothing in the biological makeup of the male that prevents him from being a competent parent. This does not mean that men have to be like women to be ordinary good enough fathers for their infant children, only that they have to deal with their fear of femininity in doing so. In order to be a father a man does not have to try to be different from a mother. He already is. That is the whole point of the exercise”.*⁴⁹

3.3.6 A gradual change of consciousness around gender roles may change over coming years, but as we see in the current social and political turmoil, progress is often followed by regression.

3.4 Universal local centres for children and families provide a secure base for parents to support each other and for children to develop prosocial skills. Looking after small children is not simply a private domestic matter. A more creative vision of **children’s centres – which should be as common as primary schools are today** – includes not only well trained staff⁵⁰ and their students but also foster parents and members of the public from other age groups such as (properly screened) adolescents and elderly people, to create a crucible for better and more equitable social and gender relations. One thousand children’s centres have closed in the past decade.⁵¹

*“The evidence shows clearly that social conditions influencing parenting affect children’s ability to reach their potential and are the major determinants of the social gradient in early child development.”*⁵²

3.4.1 Prevention of developmental disorder is better than cure, but a serious commitment to such public provision is far from current policy. The barriers to change are political and cultural. A policy obsession with “what works” simply means that many of the ordinarily complicated psychosocial problems of women becoming parents are ignored because “we don't have the evidence”

“Without routine opportunities for discussion, the most complex cases are at risk of not getting any help at all, because no one is sure who to ask and each thinks or hopes that another will provide it.”³⁵

4.0 Bringing up boys: what parents and educators need to know

Infant boys require more parental help to settle themselves than girls^{15, 53} and also display more emotions, yet tend to stifle them as they begin to distance themselves from identification with the mother⁵⁴.

When parents and educationists fully realise that boys are on average less mature than girls and significantly more vulnerable to both biological and psychological stresses, they will be in a better position to make allowances for individual boys who might otherwise be misjudged as too temperamental, or later dismissed as lazy or not concentrating.

When I first produced some of this material in the *British Medical Journal* almost twenty years ago⁵⁵ the press said I was suggesting that boys should be treated more like girls. I did not say that. I said that **boys should be treated more like human beings, rather than little bundles of muscular energy.**

4.1 It may be an insult to the fragile pride of boys and men that we are not so strong after all, hence the subtle suppression of this data which barely registered until around 25 years ago, and is still little known.

Although sex differences are small they are quite significant and are amplified by social attitudes about male and female qualities (see also [Appendix I on education](#)).

Appendix I. Girls are cleverer than boys

Apart from sheer muscle power and skill, such as in sport, on *average females are better than males at most cognitive skills.*

The exceptions are statistical male superiority in three-dimensional spatial awareness/mental rotation⁵⁶, which includes a variety of abilities from architectural imagination and Rubik's cube, to reversing into car parking spaces, 'bending it like Beckham', and darts. Not all of these are culturally determined (which female diffidence about maths is thought to be⁵⁷) There are some similar differences in rats for example.

Girls have for years outperformed boys in A*-C GCSE grades. In England in 2015 70.9% of girls and 59.2% of boys passed five or more A*-C grades⁵⁸ but the gap is now narrowing: "the gap between boys and girls narrowed from 9.5 percentage points [in 2017] to 9.1 points this year [2018]"⁵⁹. This may be partly due to the fact that boys have improved, while girls' performance stalled, reflecting their increasing despair about what will become of them (and us all.)⁶⁰

It is likely that education favoured boys when it was more regulated by rote learning and punishment, and when less was expected of girls. There will (must) be no return to such privilege. While in some subjects boys and men still get the highest grades and university firsts, a combination of biological vulnerability to learning difficulties with an unwarranted sense of superiority undermine exam performance.

A hopeful example of how gender assumptions can be challenged in primary schools

Despite the stubborn prevalence, over many centuries and in almost all cultures, of gender stereotypes – which may paradoxically be *exaggerated* by transgender fluidity⁶¹ – there is impressive anecdotal evidence that changes can be made by enthusiastic and systematic approaches to primary school children.

The committee should ensure it has testimony from **Dr Javid Abdelmoneim** who took the lead in a 2017 TV programme '[No more boys and girls](#)' based on his work over several months in a primary school on the Isle of Wight.

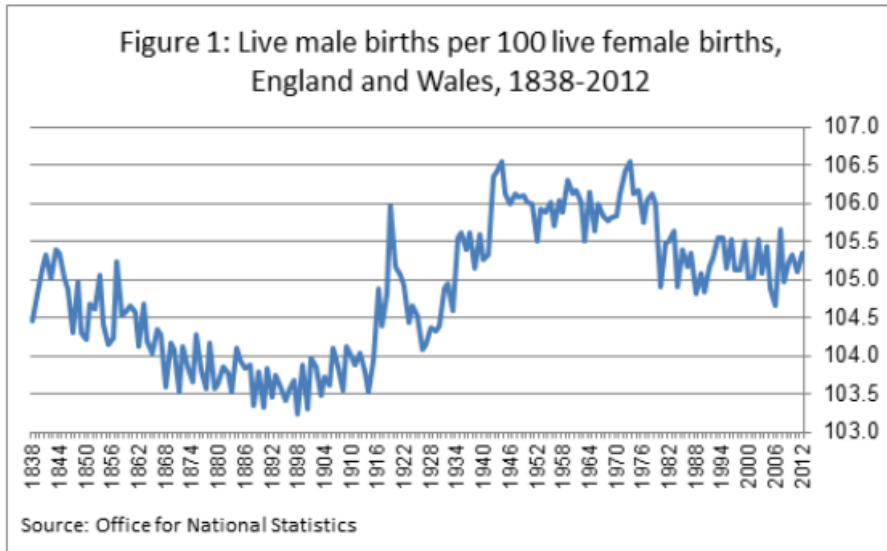
Appendix II How evolution protects the fragile male

Biologically, if one male individual can produce offspring from many females, a species does not need many males. In many (but not all) mammalian species, only a minority of males produce offspring. The rest are redundant, so it is worth his taking big risks to get a mate. It makes evolutionary sense that males tend to be less cautious than females⁶².

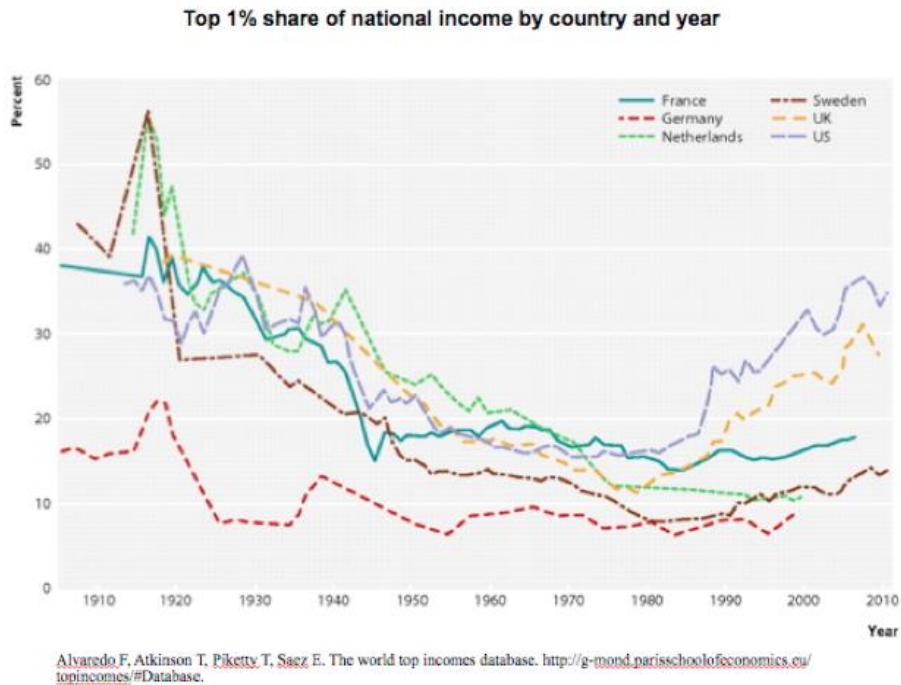
One of the least known facts about male vulnerability is the effect of maternal stress on sex ratios. *Following the 9/11 terrorist attacks on New York in 2001 the number of boys compared to girls born around four months later (during January 2002) was lower than at any other recorded time.* This suggests that male fetuses already 5 months old were the most vulnerable⁶³. Other studies have shown similar effects of major disasters on sex ratios.⁶⁴ If fewer males are born in hard times, this implies that more boys will be born to mothers who are more secure, thus reducing the risk of losing them⁶⁵: "mothers in good condition are more likely to give birth to sons, whereas mothers in poor condition are more likely to give birth to daughters" ⁶⁶

In the data below peaks in 1920 and 1946 coincide with renewed *national confidence* and relief at the end of world wars, while in 1975/6, though there was considerable political and social uncertainty, *levels of income inequality in Britain were lower than they have ever been before or since* which is associated with lower social stress and greater social cohesion⁶⁷. In terms of contented mothers these were the best of times.

This association has not been noted in the published literature, but was presented (by me) at the Association for Child and Adolescent Mental Health's 2012 national conference on *Inequalities and Child and Adolescent Mental Health* in London.



Department of Health (2014) *Birth Ratios in England and Wales A report on gender ratios at birth in England and Wales*, p.7⁶⁸



World, Wealth and Income Database <http://wid.world/>

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- ¹ Kraemer S (2000) The fragile male, *BMJ* **321**: 1609-12 <http://bit.ly/1PQecXG>
“The male fetus is at greater risk of death or damage from almost all the obstetric catastrophes that can happen before birth. Perinatal brain damage, cerebral palsy, congenital deformities of the genitalia and limbs, premature birth, and stillbirth are commoner in boys, and by the time a boy is born he is on average developmentally some weeks behind his sister. A newborn girl is the physiological equivalent of a 4 to 6 week old boy... It is clear that the male is more vulnerable from the beginning of life. Where caregivers assume that from birth a boy ought always to be tougher than a girl, his inborn disadvantage will be amplified.”
- ² Brothwood M, Wolke D, Gamsu H, et al P(1986) Prognosis of the very low birthweight baby in relation to gender. *Archives of Disease in Childhood* **61**:559-564.
- ³ Fanaroff, Avroy A. et al.(2007) Trends in neonatal morbidity and mortality for very low birthweight infants *American Journal of Obstetrics & Gynecology*, 196(2); 147.e1-147.e8. “More females survived”
- ⁴ Lauritsen, J. L., Heimer, K. & Lynch, J. P. (2009), trends in the gender gap in violent offending: new evidence from the national crime victimization survey. *Criminology*, **47**: 361-399. Doi:[10.1111/1.1745-9125.2009.00149.X](https://doi.org/10.1111/1.1745-9125.2009.00149.X)
- ⁵ [UNDOC Homicide Statistics 2013 :Homicide counts and rates & Percentage of male and female homicide victims](#)
- ⁶ Plant, D., Barker, E., Waters, C., Pawlby, S., & Pariante, C. (2013). [Intergenerational transmission of maltreatment and psychopathology: The role of antenatal depression](#). *Psychological Medicine*, **43**(3), 519-528. doi:10.1017/S0033291712001298
- a woman's experience of childhood maltreatment increases the risk of her developing depression in pregnancy, which in turn confers further risk for her offspring, and this provides a vehicle for the intergenerational transmission of risk for maltreatment and psychopathology
- ⁷ O'Donnell KJ, Glover V, Barker ED, O'Connor TG (2014) [The persisting effect of maternal mood in pregnancy on childhood psychopathology](#). *Dev Psychopathol.* **26**(2):393-403 doi: 10.1017/S0954579414000029.
- maternal prenatal anxiety predicted persistently higher behavioral and emotional symptoms across childhood with no diminishment of effect into adolescence. Elevated prenatal anxiety (top 15%) was associated with a twofold increase in risk of a probable child mental disorder, 12.31% compared with 6.83%, after allowing for confounders.
 - Results were similar with prenatal depression. These analyses provide some of the strongest evidence to date that prenatal maternal mood has a direct and persisting effect on her child's psychiatric symptoms and support an in utero programming hypothesis.
 - maternal prenatal anxiety predicted persistently higher behavioral and emotional symptoms across childhood with no diminishment of effect into adolescence. Elevated prenatal anxiety (top 15%) was associated with a twofold increase in risk of a probable child mental disorder, 12.31% compared with 6.83%, after allowing for confounders.
- ⁸ Talge, N. M., Neal, C. , Glover, V. et al (2007), [Antenatal maternal stress and long-term effects on child neurodevelopment: how and why?](#) *Journal of Child Psychology and Psychiatry*, **48**: 245-261. doi:[10.1111/j.1469-7610.2006.01714.x](https://doi.org/10.1111/j.1469-7610.2006.01714.x)
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- ¹² Morrell, J. and Murray, L (2003) [Parenting and the development of conduct disorder and hyperactive symptoms in childhood](#): a prospective longitudinal study from 2 months to 8 years. *Journal of Child Psychology and Psychiatry* **44**: 489-508. doi: 10.1111/1469-7610.t01-1-00139
- only in boys was there evidence for the existence of a sensitive period for the development of hyperactive symptoms, and to a lesser extent, conduct disorder symptoms.
- ¹³ Murray, L., Artech, A. , Fearon, P. , Halligan, S. , Croudace, T. and Cooper, P. (2010), [The effects of maternal postnatal depression and child sex on academic performance at age 16 years: a developmental approach](#). *Journal of Child Psychology and Psychiatry*, **51**: 1150-1159. doi:[10.1111/j.1469-7610.2010.02259.x](https://doi.org/10.1111/j.1469-7610.2010.02259.x)

"Boys, but not girls, of PND mothers had poorer GCSE results than control children. This was principally accounted for by effects on early child cognitive functioning, which showed strong continuity from infancy. PND had continuing negative effects on maternal interactions through childhood, and these also contributed to poorer GCSE performance. Neither chronic, nor recent, exposure to maternal depression had significant effects."

¹⁴ Hay DF, Pawlby S, Sharp D, Asten P, Mills A, Kumar R (2001), [Intellectual Problems Shown by 11-year-old Children Whose Mothers Had Postnatal Depression](#). *Journal of Child Psychology and Psychiatry*, **42**: 871–889
doi: 10.1111/1469-7610.00784

¹⁵ Weinberg, MK, Tronick EZ, Cohn JF, Olson KL. (1999) [Gender differences in emotional expressivity and self-regulation during early infancy](#). *Developmental Psychology* **35**; 175-188. (p 187)

at 6 months "boys displayed more negative affect than girls during the face-to-face still-face paradigm. They were more likely than girls to show facial expressions of anger, to fuss, to gesture to be picked up, and to try to escape or get away by turning and twisting in the infant seat. In addition, boys tended to cry more than girls.

... mothers and sons more carefully tracked each other's behavior and facial expressions than mothers and daughters. This greater coordination, which takes place at a subtle microtemporal level, may function to help boys maintain self-regulation... the capacity for self-regulation may be at the base of gender differences in infant emotional expressivity.

Boys appeared to have a more limited capacity for self-regulation than girls and made their needs explicit to the mother by using a wider range of both positive and negative expressive displays"

¹⁶ Fukuda M, Fukuda K, Shimizu T, Møller H. (1999) Decline in sex ratio at birth after Kobe earthquake, *Human Reproduction* **13**; 8: 2321–2

¹⁷ Catalano R, Bruckner T, Marks AR, Eskenazi B. (2006) Exogenous shocks to the human sex ratio: the case of September 11, 2001 in New York City, *Human Reproduction* **21**:3127-3131

"the sex ratio in New York City in the period 1 January to 28 January 2002 fell to 1, which was the lowest observed value during the test period and significantly below the value expected from history" [the sex ratio at birth worldwide is commonly thought to be 107 boys to 100 girls]

¹⁸ Platt, M (1998) Child health statistics review, 1998, *Arch Dis Child* **79**:523-7

¹⁹ 'Child mortality rate in England and Wales in 2011'. Sidebotham P, Fraser J, Fleming P, Ward-Platt M (2014) [Patterns of child death in England and Wales](#) *The Lancet*, 384 (9946) 904 -914

²⁰ Green H, McGinny A, Meltzer H, et al. (2005) *Mental health of children and young people in Great Britain, 2004: Summary report*. London: Office for National Statistics.

²¹ Hammerton, G., Mahedy, L., Mars, B., Harold, G. T., Thapar, A., Zammit, S., & Collishaw, S. (2015). Association between Maternal Depression Symptoms across the First Eleven Years of Their Child's Life and Subsequent Offspring Suicidal Ideation. *PloS one*, **10**(7), e0131885. doi:10.1371/journal.pone.0131885. p.9

²² Hewlett BS, Fouts HN, Boyette AH, Hewlett BL. (2011) Social learning among Congo Basin hunter-gatherers. *Philosophical Transactions of The Royal Society B* **366**: 1168-1178. doi: 10.1098/rstb.2010.0373

²³ Frosh, S., Phoenix, A. & Pattman, R. (2001) [Young Masculinities: Understanding Boys in Contemporary Society](#). London: Palgrave

²⁴ Fabes RA, Eisenberg N, Karbon M, Troyer D, Switzer G. (1994) The relation of children's emotion regulation to their vicarious emotional responses and comforting behaviors. *Child Dev* **65**: 1678-1693

Significant differences in the perception of emotional states are established at an early age. When exposed to the distress of others, young boys are less sympathetic than girls. A group of 6 year old girls and boys were listening to the recorded sound of a crying baby. Many more girls than boys spoke kindly to what they assumed was a real infant, while more than twice as many boys simply turned the speaker off. Tracings of heart rate variability suggested that the boys were more anxious; they could not tolerate the infant's distress. [cited in [the fragile male](#), ref 44]

²⁵ Halmers, KF, Andrew Mente, A. (1999) Alexithymia and health behaviors in healthy male volunteers, *Journal of Psychosomatic Research* **47**(6) 635-45.

²⁶ Sullivan L, Camic PM, Brown, JS (2015) Masculinity, alexithymia, and fear of intimacy as predictors of UK men's attitudes towards seeking professional psychological help. *Br J Health Psychology* **20**(1): 194-211 doi: 10.1111/bjhp.12089 (p 205)

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<https://www.theguardian.com/society/2019/feb/05/youth-unhappiness-uk-doubles-in-past-10-years>
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Self-harm presentations become increasingly common from age 12 years onwards, particularly in girls, such that between ages 12 years and 15 years the girl-to-boy ratio is as high as five or six to one.
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