



The Challenges for Boys and Men in Twenty-First-Century Education

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Introduction

Boys do not do as well as girls in education. Because most of a person's formal education takes part in childhood and adolescence, "the gap" refers primarily to the gap between boys and girls rather than a gap between men and women. Therefore, the gap is sometimes called the "boy problem" (e.g., Hamilton and Jones 2016) or even the "boy crisis". In this chapter, I will use the term "boy problem".

We know of the widespread nature of the boy problem because of the availability of school results from around the world. In today's world, children are not simply sitting tests and exams in the classroom; the numbers are collated and used by all sorts of governmental agencies. These aggregated or anonymized data are often made public. Further, there are a number of large-scale international educational surveys, such as the Programme for International Student Assessment (PISA), which give detailed information about student performance around the globe.

The boy problem varies from location to location. This chapter focuses on Great Britain. The situation in the UK is similar to other economically developed Western countries, including the USA, Australia, and European nations. Even so, countries differ in the degree to which boys and girls perform or

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participate differently. In particular in Africa and some South-Asian countries, girls rather than boys fall behind (Stoet and Geary 2019).

Not only does the boy problem vary between countries, it also seems to have changed over time.

It is difficult to determine how exactly it has changed over time, because reliable and comprehensive data sources become sparser the further one goes back in time. We know that the English O-level data show that adolescent boys and girls did, roughly, equally well up to the mid-eighties. That said, some older academic manuscripts reported a boy problem as well. For example, Johnson's (1938) article titled "Girls do better than boys in school" (referring to certain US data). Similarly, Kilpatrick's (1951) thesis on school performance in Texas (US) found that girls performed better. And going back even further in time, Hunt (1991) reported that in early twentieth-century England, more girls than boys attended school (as is the case today). Thus, the boy problem may not be an entirely new problem, although the lack of reliable comprehensive data limits our understanding of its history. Further, the nature and purpose of education have changed enormously over time, which renders older data of less interest to today's world.

The boy problem, as such, became discussed in the late 1990s. This increased interest has become known as "the boy turn" (Weaver-Hightower 2003). The interest has resulted in a range of books about boys' problems for the general public, such as "Raising Cain" (Kindlon and Thompson 2000), "The war against boys" (Sommers 2001), "Boys adrift" (Sax 2016) and "21st century boys" (Palmer 2009). Fascinatingly, the authors of these books come from very different academic disciplines.

The interest in the boy problem has not only resulted in journal articles and books, but also in a number of reports written by charities or governmental institutions (e.g., Harland and McCready 2012; Hillman and Robinson 2016; Younger and Warrington 2004). Even so, despite 2 decades of increased attention for the boy problem, we still have not yet found a solution.

This paper is divided into three parts. Part I is about the current situation at different stages in the English educational system. Part II is about possible causes. Part III focuses on solutions.

Today's Boy Problem in Great Britain

Great Britain consists of 4 "devolved" parts, namely England, Wales, Northern Ireland, and Scotland, each with their own Department of Education. Despite some important differences, there are many similarities between educational

regulations in these regions, especially between England, Wales, and Northern Ireland.

Pre-primary Education

Pre-primary education has different names in different countries and is typically not compulsory. In the UK, pre-primary education is officially known as “early years” education. It is an opportunity to playfully develop or strengthen a variety of skills and to learn to socialize. In England, the government sets expectations of what children should learn as part of the so-called *Early Years Foundation Stage* (covering children between birth and 5 years old).

The requirements of “Early Years Foundation Stage” were introduced in 2008 and are controversial among child and educational practitioners (Richardson 2013). The expectations include being able to write simple words and sentences, count to 20, and do simple addition. These are relatively high expectations compared to past expectations in England and compared to countries where reading and writing are formally introduced at age 6 (the majority of countries) or even age 7 (Finland and Estonia).

Many English children do not meet the expectations set out in the Early Years Foundation Stage, especially boys. For example, boys scored lower in 16 out of the 17 Early Learning Goal subject areas (“technology” was the only subject where boys and girls scored equally, Cotzias et al. 2013). Note that not all the 17 goals are “academic”, it also includes basic skills, such as being able to go to the toilet independently. In any case, the boy problem in English education already starts before children have even started primary school.

Despite some criticism, I would like to point out, though, that the Early Years Foundation Stage has clear advantages, such as standardizing what can be expected from pre-school education. The observational assessments of how children develop a range of different skills can help parents and teachers to better support their children. This may be particularly beneficial for those children who are more likely to fall behind (including boys).

Primary Education

Primary education is for children, roughly, for the ages from 5 (depending on country, see above) to 11. Primary education is the same for all children—although there are separate schools for children with special needs. In England, boys have far more special educational needs than girls across all age groups

(around 7% points difference, Department for Education 2017). In the United States, we also see a gender gap in special education needs (Oswald et al. 2003). I do not have data for all countries, and special education needs might be defined differently across cultures, but I suspect that this gender gap in the need for special education is an international phenomenon. This means that broad solutions need to be developed, rather than just focusing on specifically British issues. For example, while one may argue that British boys fall behind because primary school starts unusually early, this does not explain why the boy problem is also found in Finland (Finnish boys fall particularly behind in reading comprehension, Stoet and Geary 2015).

This larger number of boys in special needs classes is not surprising given that young boys are more likely than girls to suffer from attentional disorders, stuttering, and dyslexia (e.g., Halpern 2011). Further, boys are far more likely to suffer from colour blindness, which makes it hard or even impossible to understand coloured lesson material, especially when the colours are key to understanding (Todd 2018). Such problems can continue throughout life, limiting career choice and reducing quality of life in the workplace (Barry et al. 2017).

Secondary Education

In England, Wales, and Northern Ireland children will sit GCSE exams at age 16 and, optionally, A-level exams at age 17 or 18 (Hillman and Robinson 2016). These exam results for each school-subject are made publicly available for both genders. The GCSE target scores are between A* (highest) and C (lowest; note that the grading system is in the process of being changed to a numerical system). For example, the 2015 dataset has 49 subject areas. Of these, only mathematics and English are compulsory subjects. Across all subjects, 8% of girls and 5.2% of boys get the highest grade, which is an A* grade, and 73% of girls get a score between A* and C compared to only 65% of boys. This is a considerable gap. If we split the data up by subject, we find that in 46 out of 49 subject areas, more girls than boys get A* grades. There are only 3 subjects for which this is different in the UK: mathematics and the categories “other sciences” and “other technology” (both have relatively small numbers of students).

If we look at the compulsory subject English, we see that 73% of girls get a grade between A* and C compared to only 58% of boys, again a big difference. According to recent research (Sutton Trust 2015), one of the concerns is that bright boys from poor backgrounds perform lower than expected

based on their test-scores carried out at age 11. Thus, it seems there is something (unknown) that forms a barrier towards their success between the ages of 11 and 16—future research is necessary to determine exactly what this is. One possible explanation are the different effects of puberty on boys and girls (Dekker et al. 2013).

The situation is slightly different in the A-levels (the optional level of upper-secondary education needed for higher education entry). One of the problems with understanding these data is that only 45% of participating students are boys (in the latest 2018 data), which is important to take the results into account. The A-levels have been reformed in the past few years. Until 2013, there was a clear gap in the percentages of boys and girls achieving the A grade across subjects. In the 2018 data, when A-levels exam data were based on final exams following a 2-year study period, girls still did better than boys in the majority of subjects, except that for the top grade A*, the percentage of boys was higher (but because boys are underrepresented, as noted, still more girls than boys may actually have received a top grade). In other words, at the very high end of the achievement distribution, we see that boys do well, but this is not true for the majority of male students. Also, even though the percentage of boys with an A* is higher, there are actually more girls than boys getting an A* in absolute numbers, which is expected, given that in 2018, there so many more girls sitting A-levels.

Apart from exam data, we have many useful data from international educational surveys such as the PISA. PISA is a large and expensive international project in which around 70 countries participate and is one of the most influential educational surveys (OECD 2003). Every 3 years, thousands of children from each country sit a 2-hour test which measures their abilities in three domains: Reading, Mathematics, and Science Literacy. The test is the same for all children, although translated into different languages to ensure it is culturally neutral.

In 70% of countries, girls outperform boys (Stoet and Geary 2015). This lead of girls, however, was not found in the UK or the United States. In both of these countries the relative advantages for girls in reading and boys in mathematics cancel each other out, while boys and girls score similarly in science literacy. This is quite a contrast to the British GCSE exam data results, in which boys fall behind in nearly all subjects! The difference between UK exam data and PISA data can possibly be explained by the fact that GCSE exams cover far more subjects than PISA tests, and because GCSEs are more sensitive to homework, which boys do less of (Hillman and Robinson 2016).

Tertiary Education

Tertiary education follows secondary education (e.g., university education or vocational training). It is well known that there is a growing gender gap in university enrolment; every year, more females than males go to university. In 2015, UK girls were 35% more likely to enter university. This gap was twice as large as the gap in 2007 according to a report by the Universities and Colleges Admissions Service (Weale 2016) and the gender gap in admissions in 2015 was the highest on record (Hillman and Robinson 2016). Women now make up more than half the students in 2/3 of university courses. It is most likely that the large and growing participation gap in tertiary education is a cumulative effect of years of gender gaps across the educational track. The situation is similar in other Western countries (e.g., in the United States, there is a 5% point difference in college enrollment, Musu-Gillette et al. 2017).

Causes

How well a child performs and behaves at school depends on many different factors. For example, a child which lives in an emotionally stable family with parents who set good examples (e.g., reading with children at home) will likely benefit educationally, yet such positive factors may be counteracted, for example, by poor diet, poverty, or noisy surroundings (which distract from homework).

Just like any child's success of learning is related to many factors, so is the boy problem. Some of these factors are biological and others are sociocultural. Being able to identify and effectively counteract the most influential of factors will increase the likelihood of managing the boy problem more effectively. And please note that "biological factors playing a role" does not mean that their influence cannot be dealt with—for example, puberty is a biological factor, and schools and teachers can very well (and typically do appropriately) deal with its challenges by looking after children's emotional and physical well-being. Similarly, ageing is a biological factor, and the way to deal with it is creating age appropriate material, which all schools do (although there are issues where practitioners do not agree, in particular issues around religion, gender, and sex).

Identifying all the causal factors of the boy problem is complex. For example, one of the direct and indisputable causes of boy's underperformance, in particular in secondary education, is that they do not spend as

much time on their homework as girls (e.g., Hillman and Robinson 2016). That is good to know, but it raises further questions of what the cause is of boys not spending enough time on their homework. Do boys not do as much homework as girls because of a lack of motivation? Is that because the teaching material is not as engaging for boys as it is for girls? Do parents and teachers possibly not encourage boys as much as girls to do homework? Do boys possibly lack the concentration abilities that girls have? In short, each cause is likely part of a complex chain of causes, and it will take much time and effort to fully understand these.

The implication of the complexity of the causal chains behind the boy problem is that whenever someone has a *simple* solution for it, it is most likely not realistic. For example, the link between self-confidence and achievement is, most likely, reciprocal (Fraine et al. 2007).

In order to create a realistic view on solutions for the boy problem, we first need to map out all the different factors playing together in causing the boy problem. Here, I identify 4 different types (or classes, or domains if you will) of causes: (1) Cognitive causes, (2) Attitudinal/emotional causes, (3) Social causes, (4) Physical causes. And even these different domains are not entirely separate, given that physical factors will underlie many of the other factors.

Cognitive Causes

Human brain development is a slow process. The human brain keeps developing up to the early twenties. Brain development is complex and is influenced by many factors. Boys and girls go through the same stages, but at slightly different speeds at different times. Further, boys and girls have different levels of vulnerability for a number of disorders, as explained below.

Slower Language Development

It is well accepted that boys develop language skills more slowly than girls. For example, at age one, the vocabulary of girls is larger than that of boys (Bouchard et al. 2009). A Norwegian study showed that one-year-old girls raised by low-educated mothers have a larger vocabulary than boys of highly educated mothers (Zambrana et al. 2012). This is astonishing because we know that parental education is one of the best predictors of children's success in school (Davis-Kean 2005). In other words, the education of a mother cannot compensate for the gender difference in vocabulary development. Further, language disorders such as stuttering and dyslexia are more common in boys than in girls (Halpern 2011).

At age 15, boys fall behind girls in language comprehension tasks in all countries, that is, it is a universal effect (OECD 2016). Given that language is key for understanding teachers and for expressing one's knowledge in all school subjects, it may well be that language plays a key role in the boy problem.

Slower Brain Pruning and Later Maturation

Speed in maturation is not only an issue in early language development (i.e., boys developing vocabulary more slowly). The pruning of brain cells takes place in the teenage years; brain pruning is an important aspect of normal brain development. It is the removal of unnecessary connections between nerve cells. This is part of normal development and leads to a more efficiently fine-tuned brain. It has now been shown that the pruning process starts earlier in girls (Lim et al. 2013), namely between the ages 10 and 12. In boys it starts between the ages 15 and 20. That is a relatively big difference and can explain part of the growing gap between teenage boys and girls.

Attitudinal Causes

Children's positive attitudes towards school, in general, decline during primary school, and this effect is stronger for boys than girls (Haladyna and Thomas 1979). On the other hand, Canner et al. (1994) reported a steeper decline in girl's positive attitudes towards school with the onset of puberty. Even in their study, though, boys still scored lower in regard to satisfaction with school, commitment to classwork and reactions to teachers (Canner et al. 1994, Table 4). This is a good example how boys and girls can change their attitudes at specific times in development and both genders showing less or more vulnerable times. In regard to the boy problem, however, the poorer school attitudes of boys likely play a role in the bigger picture of lower achievement.

Of course, attitudes towards school are complex, and when children become more independent, they will develop different tastes for leisure time activities. Video gaming is, for many, a very attractive leisure time activity. Academic research shows that "pathological gaming" is almost entirely a male adolescent issue (Gentile 2009; Gentile et al. 2011). For example, (Lemmens et al. 2011, p. 45) state that "In general, pathological involvement with video games seems mostly restricted to adolescent boys. In line with previous findings, the vast majority of adolescent girls showed neither signs of excessive nor pathological gaming". Further, the authors state that these children's lives are disrupted by the displacement of other important activities, including learning and social contacts.

Further, the games are so easily available, typically on the same computer where our children need to do their homework, that it is easy to understand why children cannot withstand the temptation.

Social Causes

Boys are more likely than girls to drop out of school. While we may find it tempting to blame social situation or a possible lack of purpose and view on masculinity, or a lack of proper male role models for this, the situation is actually not that clear.

Some researchers have argued that the absence of fathers is a major issue (e.g., Flouri and Buchanan 2002; Santrock 1975), and there is some evidence that this affects boys more so than girls (Bertrand and Pan 2013). This may in part have to do with the fact that mothers more easily identify with their daughters than sons, the authors argue.

There have been multiple calls for more male teachers. Interestingly, parents view male teachers not only beneficial for boys, but also for girls (McGrath and Sinclair 2013). Research addressing whether boys do better with male teachers shows a different picture. A meta-analysis of Carrington et al. (2008) found that children taught by same-sex teachers do no better than others. Further, a study of 21 European countries found that boys do not benefit from male teachers in their reading and maths skills (Neugebauer et al. 2011). Last but not least, boys in Islamic countries often fall behind girls (Stoet and Geary 2013, 2015), despite often taught by male teachers. If male teachers really have such a positive effect on boys, one would have expected that boys are at least as good as girls in those countries.

Putting these studies together, one may argue that the male role model at home is much more important than a male role model in the classroom. That said, it might also be the case that the positive effect of at least some male teachers in a school may be that male teachers have better ways of dealing with boys because they have been boys themselves, and have experienced in childhood the “rough and tumble play” or “rough-housing” that is more common among young boys than girls (DiPietro 1981).

Finally, a study of college students in Norway concluded that social background and personal characteristics cannot explain why more boys drop out, though it is possible that the school system itself might cause this by treating boys and girls differently (Almås et al. 2016). Note that this study is mostly relevant to tertiary education, and that effects of social background on the boy problem appear important earlier on (Bertrand and Pan 2013).

Physical Causes

Lifestyle

A major problem playing into the boy problem is our increasingly sedentary lifestyle (Tremblay et al. 2011). We know that it is good for children to be physically active and run around between sessions of homework (Janssen and LeBlanc 2010).

English boys (in the 1990s) consumed similar amounts of alcohol as girls, and smoke less than girls (Sutherland and Willner 1998). Boys consume more energy drinks (Lee et al. 1999), which are largely banned in the UK for children under 16. The consumption of these drinks may well play a role in concentration problems and disrupted sleep patterns (Calamaro et al. 2012). Boys also are more likely to consume illegal drugs.

Finally, it should be pointed out that today's children are more at risk of interrupted sleep and lack of sleep due to mobile phones or other modern media. It is not entirely clear whether this affects more boys than girls. Some studies have reported that boys are more likely to have TV or game console in their bed room (Van den Bulck 2004).

Endocrine-Disrupting Chemicals

The exposure to a range of chemicals due to pollution and contact with plastics is responsible for disruption of the normal hormonal household, which in turn may influence attentional disorders, such as ADHD (Polańska et al. 2013). This is true for both boys and girls, although it affects boys and girls differently. For example, girls start puberty much earlier than in the past at least in part due to endocrine disruption. Sax (2016) argued that because girls start puberty earlier, the puberty-onset gap becomes larger—or in other words, the asynchrony in bodily development between boys and girls grows larger.

Why We Should Try to Resolve to Boy Problem?

Idealistic-humanistic reasons are based on the idea that it is simply unfair that one specific group underperforms. On the other hand, *utilitarian reasons* to tackle the boy problem are partially based on the idea that education is good for the economy (e.g., OECD 2014). Thus better educated boys will be in the interest of the common good. Furthermore, larger number of boys failing in school

increases the likelihood of them becoming involved in delinquency (Shader 2004). Finally, the lack of highly educated men causes a difficulty for women to find a partner with similar levels of education (Birger 2015).

Altogether there are many reasons to care about underachieving boys. There are, however, alternative views. There are those who argue that there is not really a boy crisis and who call the concern for boys falling behind “hysteria about boys” (Mead 2006). The argument is that both boys and girls have gained in terms of educational performance over time, but girls just more so than boys (Mead 2006). Therefore, it is argued that boys do not really have a problem.

Similarly, Reed (1999, p. 93) set out to “attempt to deconstruct the discursive complex around the subject of the ‘underachieving boy’, and to critique its composition and effects from a feminist perspective”. Her main argument appears to be that the available data on the gap are too unreliable to draw the conclusion that boys fall behind. Further, she argues that “the current emphasis on boys’ performance in schools might suggest that boys are disadvantaged when it comes to progress through employment hierarchies. In fact, it is still the case that a glass ceiling operates for women and, on average across the employment sector, men’s pay is significantly higher than women’s, with large number of women trapped in low-paid and part-time work” (Reed 1999, p. 97).

Another position is the one that views programmes to help boys as based on “anti-feminist”, “homophobic”, and “right wing” sentiments. (Jóhannesson et al. 2009). For example,; “The production of such global citizens is unlikely to occur when those who are the most privileged in a society are deemed to be victims, as with the way in which the boys’ debate has developed and is developing” (Jóhannesson et al. 2009, p. 322). Similarly, the National Union of Students in the UK criticized the Higher Education Policy Institute’s report (Hillman and Robinson 2016) which called the gender imbalance in university enrolment a national scandal. In response to this report, the NUS stated that the Higher Education Policy Institute had taken a complex issue and turned it into “a battle of the sexes”. The underlying sentiment seems to be that as long as there are more males than females in top positions, there should be no institutional help for underachieving and underrepresented boys. This view ignores the problems of many boys. Further, this view ignores the fact that dealing with the boy problem not only benefits boys, but is also beneficial to women and the common good.

Even though dealing with these issues will be particularly beneficial to boys, there are certainly also girls that suffer from these problems. For example, even though fewer girls than boys have attentional problems (Sobeh and

Spijkers 2013) or a gaming addiction (Gentile 2009; Gentile et al. 2011), there is no reason why the girls that do have problems should not also benefit from the same programmes to help boys with these issues.

What Can Be Done

As noted earlier, there are *no simple solutions* to the boy problem, given that multiple factors play a role. That is particularly true because the boy problem is very broad—that is, we are talking about a problem that affects, potentially, half the population of school children. The larger the group one is speaking about, the more complex the solution will be, by definition. One way to deal with the complexity of solutions is to consider different classes of factors that play a role (as discussed in the previous section of this chapter).

The Cognitive Factor: Interventions Related to Sex Differences in Cognitive Development

There are numerous interventions to help children with the development of their language skills, including speaking, reading, and writing. Some of these problems are so obvious (e.g., stuttering) that they will typically lead to interventions, while other problems are just a matter of degree, and will only lead to direct interventions if children fall below a certain standard (e.g., attentional problems).

There are a few language-related approaches specifically targeted at boys. One of these is to provide boys with reading material they find interesting. Given that boys and girls often have different interests, it is important for co-educational schools to choose material that appeals to both boys and girls, where possible. Further, independent reading can be encouraged by providing boys with books they like; this includes specific fiction and non-fiction.

The National Literacy Trust wrote a review of children's reading habits and found that nearly twice as many boys as girls do not enjoy reading (Marsh 2015). Sometimes, boys are more sensitive to selected reading material than girls. For example, boys prefer books in which the main character is a boy, whereas girls do not have such a preference for the gender of the main character. In the past years, specific boy books have become more popular, and schools can help to add these to the existing library to increase boy's reading appetite.

Another important cognitive factor is that between the ages of 10 and 15, there are very clear sex differences in cognitive development (Dekker et al. 2013), with girls better in cognitive tests of goal setting. This is particularly relevant given that secondary education starts for these children. Children are given more responsibility, for example, in regard to home work. Boys will struggle more with this. A solution would be to give children more specific goals and less responsibility. Alternatively, being aware that many children are simply not yet ready for more responsibility can help teachers and parents to better support these children.

The Attitudes Factor: Interventions for Non-cognitive Factors Related to Learning

Boys and girls differ considerably in their attitudes to learning. For example, it is now well established that boys spend less time on their homework and show more behavioural problems at school. Dealing just with those two problems can make a considerable difference in academic performance and emotional well-being.

It is often argued that boys have a stronger need for “running around”. Of course, this is good for all children, not just for boys. In any case, there are now more and more schools ensuring that children get an opportunity to move around, sometimes even in the classroom.

One reason why children do not spend enough time on their homework is because they have more interesting things to do. Boys are far more likely than girls to spend much time on video gaming. Schools and parents need to guide boys in this regard. Reducing access to video games can only be a positive thing. It is a major challenge, given the attractiveness of the video games. The addictive nature of these games combined with the needed time investment to master these games is most problematic—children not only spend too much time on them, they also do not get sufficient healthy exercise and fresh air. In other words, we are dealing with a combination of problems that can amplify each other.

The Social Factor: Interventions Related to Sex Differences in Social Attitudes

Boys and girls have different social attitudes. This is true at all ages, but of course, changes even more strongly after the onset of puberty. Boys in general take more risks to impress their friends and potential girlfriends.

While typically girls focus much on their looks to attain social status, boys focus more on specific behaviours to attain social status; some of this behaviour is undesirable and interferes with education. This is something that really makes boys' lives harder (even when they might not be aware of that themselves at that age).

One approach to deal with this for parents and schools is to guide boys' desire to show off through leisure activities with a competitive element, which includes but is certainly not restricted to sport.

It is important for society as a whole to create sufficient opportunities where boys can thrive, and this is often problematic in densely populated cities, where there is less time for sports and more opportunity for problematic behaviour.

One of the paradoxical situations is that while boys are interested in showing off, they rarely do this in academic efforts. It would be helpful if boys could be encouraged to do so, but often boys do not think this is "cool". To some degree, a boy can gain more peer admiration by doing something that crosses social norms and is risky—doing this may be a way to gain group status, display independence and strength. In the stone age, these would probably have been desirable traits, but in the modern densely populated and built-up world, the risks are different.

Some have argued that a solution to the boy problem might be single-sex schools. For example, in single-sex schools, post-pubertal boys and girls may influence each other negatively. One of the strong proponents of this has been Sax (2016), citing differences in brain and sensory mechanisms. At the same time, this view is heavily criticized by others who argue that the differences between boys and girls are modest (Eliot 2013; Halpern et al. 2011). In response to Halpern et al. (2011), Park and colleagues (2013) pointed out that their own work clearly showed benefits of single-sex education in Korea, where children have been randomly assigned to mixed or single-sex schools. The latter is extremely relevant, given that the benefits of single-sex schools are often indistinguishable due to selection (e.g., in the UK, single-sex schools are rare and often attended by children with a higher socio-economic status, which in itself is a good predictor of performance). In a more recent study of Korean data, Sohn (2016) argued that benefits of single-sex education are small. Further, Saudi Arabia is a good example of a country in which boys are not only taught in single-sex schools mostly by male teachers. The boy problem in Saudi Arabia is, however, particularly large. In short, there is at this point too little evidence to claim that single-sex schooling would resolve the boy problem.

The Physical Factor: Interventions Related to Physical Health

Education is a mental activity. And yet, as we have seen before, mental activity requires a healthy lifestyle. You will probably have heard or read that especially boys need sufficient time to “release their energy” through physical activity. The reality is that today’s children just do not get enough physical activity (Salmon et al. 2011). This is clearly reflected in today’s obesity rate among children in the UK and other countries—nearly a third of British children between 2 and 15 years old are overweight or obese (Health and Social Care Information Centre 2015).

This is relevant to the boy’s problem, because boys suffer more than girls from a lack of activity (Haapala et al. 2014). It is also the case that the rate of obese English boys is higher than that of girls from a young age, and rises to a 4% point difference at the end of primary school (22% boys vs 18% girls at age 10–11 are obese; Baker 2018). That said, not all studies found reliable gender differences in moderate exercise (Norris et al. 2018).

When it comes to the physical factor in the boy problem, it is not just physical activity that counts. Another important factor is sleep. Children require more sleep than adults. For example, a 15-year old still requires 9 hours of sleep. Today’s 15-year olds often sleep less than 9 hours. This is true for both boys and girls due to modern media.

Caffeine has tended to evade people’s attention as a psychoactive substance (Calamaro et al. 2009). Caffeine is an addictive stimulant that affects cognitive functioning and attention, and which is associated with unpleasant withdrawal symptoms (Nehlig and Boyet 2000). Caffeine, and caffeine withdrawal symptoms, directly interfere with concentration and sleep patterns (Calamaro et al. 2012). Studies consistently find that caffeine consumption is greater among boys than girls (Lee et al. 1999). It is mostly consumed through soft drinks, and boys consume these more than girls (Harnack et al. 1999). A solution to this problem might be to regulate the sale of high-caffeine drinks to those over the age of 18 (as has now the case in parts of the UK). Additionally an information campaign is necessary to inform parents and teachers about the risks of caffeine.

Parents and schools can help with instilling a healthy lifestyle in children. It is important to control children’s access to digital media, and also to give a good example.

Further, adolescents are likely to fall victim to alcohol and drugs, some of which again can be more of a problem for boys than for girls. For boys there is a stronger “showing off” and risk-taking factor involved. In the past

years, much progress has been made to raise the awareness for the risks of these products, but for children, such messages are difficult to understand and far from their lived experience. Therefore, explaining the long-term benefits of abstaining from alcohol and drugs need to be better explained, and probably more regularly. Further, society needs and can do more to reduce access to such products.

Finally, the role of endocrine-disrupting chemicals has been mentioned. There are no simple solutions to deal with that. Ultimately, only governmental regulation can resolve this issue, and there is indeed a growing awareness about this.

Concluding Remarks

The average boy does not do as well as the average girl in school. As a consequence, far fewer boys participate in the A-levels and tertiary education. We know that young males are far more likely to be unemployed than young females. This is an issue that needs addressing, but there are no simple solve-it-all solutions. Instead, many different factors play a role, and each of them needs to be addressed. For example, it is currently not entirely clear what British boys do instead of A-levels and tertiary education—we need to find out so that we can ensure that boys get the best opportunities for future satisfactory employment.

So far, there has been little governmental attention for the boy problem. The government could have a real impact by giving more attention to the various issues affecting boys more than girls. Further, solving the boy problem will require a cultural change on how children are raised in a world so full of readily available forms of entertainment, in particular digital; parents and families need to be strongly involved in a solution.

Finally, I would like to point out that there are also girls at risk of the problems listed in this chapter. The most equitable way forward is to create problem-centred solutions. To me it seems unfair and unethical to exclude girls from programmes to help with a number of specific problems boys suffer more from, just as it is unfair and unethical to exclude boys from interventions in areas in which girls do need more help than boys (e.g., encouragement for STEM subjects). Thus, we need to make sure that we give more attention to the problems boys suffer from, but we should not exclusively see this as more attention *for boys*, but rather as attention *for specific sets of problems*. That way, everybody will be a winner!

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