



# Equally Protected? A review of the evidence on the physical punishment of children

Anja Heilmann, Yvonne Kelly and Richard G Watt

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## Authors

Dr Anja Heilmann  
Prof. Yvonne Kelly  
Prof. Richard G Watt

## Authors' affiliation:

Department of Epidemiology and Public Health  
University College London  
1-19 Torrington Place  
London WC1E 6BT

## Steering group

Sheila Hamilton, Children and Young People's Commissioner Scotland  
Maire McCormack, Children and Young People's Commissioner Scotland  
Annie Taylor, Children 1st  
Alison Wales, NSPCC Scotland  
Nicola Wray, Barnardo's Scotland

# Foreword

A positive start in life provides the foundations for good health and well-being. A supportive, nurturing and loving family environment is particularly important in early childhood to encourage and enable children to develop and reach their full potential. Wider society has a key role in protecting children through the creation of supportive conditions for families to flourish. Unfortunately in Scotland and across the UK many children do not have the best start in life. For many children, physical punishment is still part of their upbringing. This is despite the fact that physical punishment violates children's human rights according to the UN Convention on the Rights of the Child.



This excellent report has conducted a comprehensive review of the evidence on just how prevalent the physical punishment of children is, and what its effects are on the child and family. The evidence presented here is both alarming and compelling. Despite a steady decline in recent decades, physical punishment remains a common occurrence in many families in the UK. Public attitudes are however changing, with a noticeable shift towards viewing physical punishment as unacceptable in modern society. This review has presented very strong and consistent evidence of the harmful effects of physical punishment on children and their families. **The international evidence could not be any clearer – physical punishment has the potential to damage children and carries the risk of escalation into physical abuse.**

It is now time for action. On the issue of physical punishment, Scotland is out of step with Europe and increasingly, the world. **There is an urgent need for Scotland and the rest of the UK to comply with international human rights law and to prohibit all forms of physical punishment.** Politicians in the Scottish and UK governments need to be bold and provide a lead in this major social and public health issue. As was the case with smoke free legislation, public attitudes and social norms will change once legislation is introduced and the benefits are evident. The intention of legal change is not to criminalise parents but to help redefine what is acceptable in how we treat our children – and each other – and what we teach them through our own behaviour. Protecting children equally against assault in the law does not lead to prosecutions of parents for 'trivial smacking', any more than it leads to prosecution of adults for trivial assaults on other adults. Legal reform to protect all children fully against assault is a simple but fundamental preventative measure. Governments can no longer simply wait until public attitudes towards physical punishment change sufficiently to allow legal change to be ushered in without controversy. They must stand up for the change they purport they want to see. Urgent action is needed, now.

*Professor Sir Michael Marmot, UCL.*

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A supplementary document to this report showing summary tables of individual studies can be found at [www.nspcc.org.uk/equallyprotectedannex](http://www.nspcc.org.uk/equallyprotectedannex)

# 1 - Executive summary

## 1.1 Background and aim

The physical punishment of children is still a common parenting practice in Scotland and the rest of the UK. Although legal reform to protect children from all physical punishment in all settings is now regarded as an obligation under international human rights law, its use is lawful in the home and in private foster care<sup>1</sup> in all four UK jurisdictions. This means that children do not have the same level of legal protection from violence as adults.

The use of physical punishment, however, is becoming more and more controversial. There is increasing recognition that physical punishment constitutes a violation of children's human rights under the United Nations Convention on the Rights of the Child (UNCRC),<sup>2,3</sup> and research evidence on its detrimental effects on children's health and development is fast accumulating. The last decade has seen a surge in the number of research articles on the outcomes of physical punishment for children, as well as in the rate at which states across the world have legislated to prohibit all forms of physical punishment and give children equal protection. Over the same period, child policy in Scotland has increasingly been developed with reference to a children's rights framework. The Scottish Government's overarching approach to child wellbeing ('Getting it Right for Every Child')<sup>4</sup> is based on the twin principles of prevention and early intervention, and clearly articulates the right of all children to be nurtured, kept safe and have the best start in life.

This research project was commissioned by NSPCC Scotland, Children 1st, Barnardo's Scotland and the Children and Young People's Commissioner Scotland, with the aim of updating the findings of a previous review on physical punishment published in Northern Ireland in 2008 ('NI Review').<sup>5</sup> The current review summarises the evidence that has become available in the years since the NI Review, focusing on the following three research questions:

1. What are the prevalence of / attitudes towards different types of parental physical punishment in the UK and other OECD (Organisation for Economic Co-operation and Development) countries? In particular,
  - a. What are the trends over time?
  - b. What evidence is there of changes in prevalence / attitudes in countries which have made physical punishment illegal?
2. What are the outcomes of physical punishment for child health and development, and later-life health and wellbeing?
3. Is parental use of physical punishment related to an increased risk of child maltreatment?

## 1.2 Methodology

This review uses the term 'physical punishment' as this is the term that is commonly used throughout the UK. For the purpose of this review, 'physical punishment' was defined in accordance with the definition provided by the UNCRC:

“Corporal” or “physical” punishment is any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light.<sup>3</sup>

The review is based on the systematic search of the relevant literature published since 2005. Included were studies conducted in OECD countries and published in English between January 2005 and June 2015. In relation to research question 2, the outcomes of physical punishment for child health and development, the search was restricted to longitudinal studies.

Excluded from the review were articles that focused exclusively on child abuse or maltreatment, articles that explicitly included forms of abuse or maltreatment in their definition of physical punishment, and articles that did not differentiate between verbal and physical punishment. Also excluded were articles on physical punishment by persons other than parents / adults living with the child.

The search was carried out between April and June 2015 and included the following databases: Web of Science, PubMed, PsycInfo, and Google Scholar. A total of 98 articles were identified for in-depth review. Individual studies were critically appraised using STROBE (Strengthening the Reporting of OBservational studies in Epidemiology)<sup>6</sup> guidelines to assess their reporting quality.

## 1.3 Key findings

### The prevalence of physical punishment is decreasing and public attitudes are changing

There is good evidence that in many countries, including Scotland and the rest of the UK, the prevalence of physical punishment is declining and public attitudes have shifted. Physical punishment is becoming less acceptable, and the vast majority of parents express highly ambivalent and negative feelings about its use.

UK surveys conducted in 1998 and 2009 show a marked decline in the prevalence of physical punishment. In 1998, 61% of young adults reported that they had been smacked in their childhood, while in 2009 this was true for 43%. Physical punishment 'on a regular basis' during childhood was reported by 10% of young adults in 1998, but by only 3% in 2009.<sup>7</sup> In Scotland, according to the Millennium Cohort Study, 58% of mothers reported any use of 'smacking' with their 5-year-old children in 2006.<sup>8</sup> At the same time, between 80 and 90% of Scottish parents who participated in the Growing Up in Scotland study (GUS) said that smacking is 'not very' or 'not at all' useful.<sup>9</sup>

Cross-country comparisons showed that declines in the use of physical punishment are accelerated in countries that have prohibited its use, demonstrating the important symbolic value of legislation. Legal bans have been implemented in many countries without a majority of public support and there is convincing evidence that the passage of legislation in combination with public awareness campaigns leads to a change in public attitudes.<sup>10,11</sup>

### Physical punishment is related to detrimental childhood and adult outcomes

Over the past decade, a vast body of research has accumulated on the consequences of physical punishment for children's health and development, as well as their later-life health and wellbeing. The current review identified 74 longitudinal studies and two review articles on the outcomes of physical punishment that were published since 2005.

There is strong and consistent evidence from good-quality research that physical punishment is associated with increased childhood aggression and antisocial behaviour. The multitude of these studies, which include observational, gene-environment and experimental designs, and the consistency of their findings suggest that these links are indeed causal. Several studies showed that the relationship between physical punishment and problem behaviour is reciprocal: physical punishment exacerbates existing problem behaviour, leading to a vicious circle of cascading conflict. In other words, parents who are using physical punishment in response to perceived problem behaviour are likely to make it worse. Moreover, there is fairly consistent evidence for a link between childhood physical punishment and adult aggression or antisocial behaviour, suggesting that the effects of increased aggression among children who were subjected to physical punishment carry over into adulthood.

Physical punishment also affects children's emotional and mental health. There is good evidence that the experience of physical punishment is related to depressive symptoms and anxiety among children. Links with depressive symptoms and reduced self-esteem in later life were also reported, but were less consistent. Other negative outcomes of physical punishment include parent-child conflict, adult mental illness and adult substance abuse. Associations between physical punishment and children's cognitive ability have also been studied, but with conflicting results.

One argument that is brought forward again and again is that physical punishment is not harmful in the context of an otherwise loving and warm family environment. However, the majority of studies that tested this hypothesis found that the harmful effects of physical punishment were the same even when levels of maternal warmth were high – the 'loving smack' might be a myth.

## Physical punishment is related to an increased risk of child maltreatment

A link between physical punishment and child maltreatment was consistently supported in the reviewed literature. Physical punishment carries a worrying and serious risk of escalation into injurious abuse and maltreatment. The evidence supports the notion that physical punishment and physical abuse are part of a continuum of violence, differing only by severity or degree.<sup>5</sup> The fact that definitions of severe physical violence differed substantially between studies from different countries further underscores this view. For example, in contrast to studies from the US and Canada, a study from Finland (where physical punishment has been prohibited since 1983) adopted a much stricter definition of abuse that included slapping and hitting. These differences serve as an important reminder that such definitions are shaped by societal attitudes.

### 1.4 Conclusion and recommendations

Physical punishment is still common in Scotland and the UK. This is despite its negative effects being known and despite that it constitutes a clear violation of children's human rights. The results of the current review support and corroborate the findings of the numerous reviews and analyses that have preceded it, including those of the NI Review. A large number of good-quality studies have been published since 2005, and the vast majority of this international research evidence confirms previous findings for the harmful effects of physical punishment, including the risk of escalation into physical abuse.

The policy recommendations that follow from the evidence presented in this report are in line with previous recommendations made in the NI Review:

1. All physical punishment of children should be prohibited by law. Children should be afforded more, not less, protection from violence than adults.
2. Legislation should be accompanied by large-scale information and awareness campaigns to inform the population of the merits of positive parenting and the harm caused by physical punishment. These should be aimed at different levels: individuals, communities and the whole population.
3. It is important to support parents in using positive parenting strategies, through providing information via different channels (GP's, health visitors, schools, mass media), as well as through offering parenting programmes.
4. Organisations and professionals concerned about child welfare, including teaching, health and social care professionals, as well as charity organisations, need to be galvanised and should work together to develop advocacy and lobbying strategies which call on policymakers for an urgent change in legislation to end all physical punishment of children.



# 2 - Introduction

The physical punishment of children is still a common parenting practice in the UK. However, there are signs that public attitudes towards physical punishment are changing, with its use becoming more controversial and less widely accepted. This change in perceptions may be due to the recognition of physical punishment as a human rights issue and its consequent prohibition in an increasing number of countries,<sup>12</sup> as well as a growing body of research suggesting that physical punishment is at best an ineffective form of discipline and at worst, harmful for children’s health and development.

Reforming the law to abolish all physical punishment of children is regarded as an obligation under international law by both European and UN human rights monitoring bodies. Under the United Nations Convention on the Rights of the Child (UNCRC), all children have the right to a violence-free upbringing, including the right to be protected from all physical punishment.<sup>2,3</sup> The UNCRC defines corporal or physical punishment as follows:

“Corporal” or “physical” punishment is any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light.<sup>3</sup>

At the time of writing, 46 countries have made physical punishment illegal in all settings, that is, outside as well as inside the home (Figure 1), with a further 52 committed to law reform.<sup>12</sup> As of June 2015, the UK is one of only five countries within the European Union which have not yet committed to a ban on all physical punishment.<sup>13</sup>

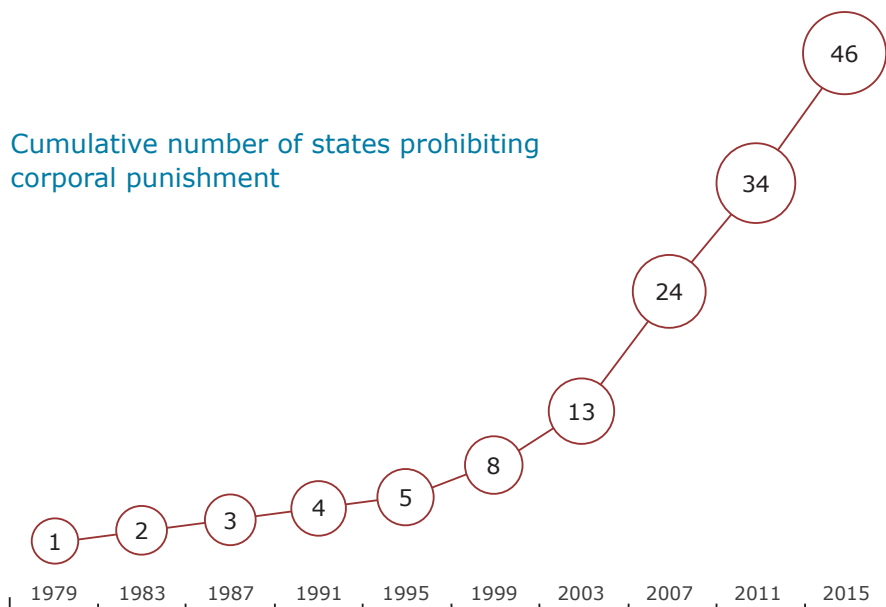


Figure 1 Timeline with number of states prohibiting physical punishment in all settings.<sup>12</sup>

Promoting positive forms of parenting is a core component of the Scottish Government’s overarching approach to child wellbeing. Parents are advised not to ‘smack’ their children, in public information literature which reflects some of the evidence base on the impact of physical punishment on outcomes for children (emphases in original):

**‘...smacking is not advisable as a method of disciplining children since it:**

**Can be dangerous** – it is easy to forget how delicate children are, particularly if you are frustrated or angry. What feels to you like a light slap can have the potential to cause real harm to a small child.

**Sets children the wrong example** – rather than correcting misbehaviour, it can teach children to hit out at people who are doing things they don’t like or who don’t do what the child wants them to do.

**Has effects which last long after the physical pain dies away** – young children will not necessarily associate the punishment with their behaviour. It can make them angry and resentful and can be damaging to their confidence and self-esteem.

**Smacking is not an effective way to teach children discipline.**<sup>14</sup>

The issue of protecting children fully against physical assault in the law, however, remains unaddressed in Scotland as in the rest of the UK. Furthermore, whilst a range of expert bodies, including the Scottish Directors of Public Health and the Royal College of Paediatrics and Child Health, as well as a wide coalition of non-governmental organisations, are calling for the abolition of physical punishment,<sup>15-17</sup> there has been a dearth of political debate about the evidence base around harm and children's right to full protection in the law for well over a decade.

In 2006 the Northern Ireland Commissioner for Children and Young People (NICCY), the NSPCC (NI) and Barnardo's (NI) commissioned a review of the global evidence on physical punishment to stimulate an informed debate on what has become a contentious issue across the UK. The report, titled 'The "smacking debate" in Northern Ireland: messages from research' and hereafter referred to as the 'NI Review',<sup>5</sup> provided a comprehensive overview of the research evidence on physical punishment published between 2000 and 2005, addressing prevalence and risk factors, impact on child outcomes, as well as attitudes and beliefs of parents, professionals and children towards its use.

In the years since the NI review, the research literature on the outcomes of physical punishment for children has increased considerably. In addition, the rate at which states across the world have legislated to give children equal protection has escalated, and evidence on the impact of legal change on attitudes towards physical punishment is now available. The current review of the international evidence was commissioned by NSPCC Scotland, Children 1st, Barnardo's Scotland and the Children and Young People's Commissioner Scotland. It aims to update the findings of the NI Review by reviewing and summarising the research literature published in the decade since 2005, and focuses on three areas of enquiry:

1. Changes in the prevalence of physical punishment and attitudes towards its use over time, especially in countries which have implemented a complete ban.
2. The impact of physical punishment on child health and development, as well as later-life health and wellbeing.
3. The link between physical punishment and child maltreatment.

The report is organised as follows:

The background section provides a brief overview of the international human rights context, the current legal and policy context in Scotland, and the findings and recommendations of the NI Review, followed by a statement of this review's aim and research questions (Section 3). Section 4 outlines the review methodology. Section 5 describes the results pertaining to each of the research questions. The discussion summarises the review's key findings and formulates clear policy recommendations that are based on the best available current evidence (Section 6). The report ends with an overall conclusion (Section 7). Summary tables with detailed information on the individual studies that were included in the review are published in a separate document (Supplement: Summary tables of individual studies) and can be downloaded here: [www.nspcc.org.uk/equallyprotectedannex](http://www.nspcc.org.uk/equallyprotectedannex)

# 3 - Background and aim

## 3.1 International Human Rights Context

Protection from physical punishment in all settings, including in the family home, is a basic human right of every child and is enshrined in international human rights law. The Convention on the Rights of the Child and other international and regional instruments place an obligation on ratifying states to ensure that their citizens are protected from physical punishment and other cruel and degrading treatment.

At international level, UN Treaty Bodies which have addressed the issue of physical punishment of children include: the Committee Against Torture (CAT) which monitors the Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; the Human Rights Committee (HRC) which oversees the International Covenant on Civil and Political Rights; the Committee on Economic, Social and Cultural Rights (CESCR) which monitors the International Covenant on Economic, Social and Cultural Rights (ICESCR); the Committee on the Elimination of All Forms of Discrimination Against Women (CEDAW), monitoring the Convention on the Elimination of All Forms of Discrimination Against Women; and the Committee on the Rights of Persons with Disabilities (CRPD) which monitors the Convention on the Rights of Persons with Disabilities. The Universal Periodic Review (UPR), in place since 2006, has also increasingly seen many states questioned by other states on their actions to address physical punishment against children.

At a regional level, the Council of Europe, responsible for the European Convention on Human Rights (ECHR), and the European Court of Human Rights (ECtHR) have seen progressive condemnation of the use of physical punishment. The European Committee of Social Rights (ECSR) which monitors the European Social Charter has also consistently condemned the use of physical punishment. In addition, the European Union (EU) has made much progress on this issue, and all member states have ratified the United Nations Convention on the Rights of the Child.

As well as treaty bodies, there have been notable initiatives at global and regional level, including the UN Secretary General's Report on Violence Against Children, the Global Initiative to End all Corporal Punishment of Children and the Council of Europe's 'Raise Your Hand Against Smacking' campaign.

Whilst it is beyond the scope of this report to go into the details of all of the above, an overview of the main instruments and initiatives is provided below.

### United Nations Convention on the Rights of the Child

The United Nations Convention on the Rights of the Child (UNCRC) is the main instrument which protects children's rights. It has been ratified by all countries across the world, apart from the USA.

Article 19 of the Convention states:

'States parties shall take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child.'<sup>2</sup>

The Committee on the Rights of the Child, an elected body of international experts which monitors implementation of the UNCRC, produces General Comments which clarify and explain the various articles of the Convention. General Comment No. 8 (2006) states that legal provisions which allow some level of violent punishment are not compatible with the Convention and ought to be repealed:

'There is no ambiguity: "all forms of physical or mental violence" does not leave room for any level of legalised violence against children.'<sup>3</sup>

Governments which have ratified the convention submit regular reports on the national situation of children's rights to the Committee for examination. In its concluding observations on the UK report in 2008, the Committee stated:

'The Committee is concerned at the failure of State party to explicitly prohibit all corporal punishment in the home and emphasises its view that the existence of any defence in cases of corporal punishment of children does not comply with the principles and provisions of the Convention, since it would suggest that some forms of corporal punishment are acceptable.'<sup>18</sup>

The Committee called on the UK to 'prohibit as a matter of priority all corporal punishment in the family, including through the repeal of all legal defences, in England and Wales, Scotland, and Northern Ireland'<sup>18</sup>

This was the third time that the UK has been urged to give children equal protection from assault (previous recommendations have been made in 1995 and 2002).

## UN Secretary General's Global Study on Violence against Children

In 2003, the UN Secretary-General appointed an independent expert to lead a global study on violence against children.<sup>19</sup> This seminal study sought to describe the nature, extent and causes of violence against children across the world, mapping measures being taken to stop this and giving clear recommendations for action. Amongst its recommendations, the report urged all member states to prohibit all forms of violence against children, in all settings, including all physical punishment. The report states:

'The Study should mark a turning point - an end to adult justification of violence against children, whether accepted as "tradition" or disguised as "discipline". There can be no compromise in challenging violence against children. Children's uniqueness - their potential and vulnerability, their dependence on adults - makes it imperative that they have more, not less, protection from violence.'<sup>19</sup>

## United Nations Human Rights Committee

The Human Rights Committee (HRC) is the body of independent experts that monitors implementation of the International Covenant on Civil and Political Rights (ICCPR). All state parties which have ratified the Covenant must submit regular reports to the Committee on how the rights are being implemented. The Committee examines each report and addresses its concerns and recommendations to the state party in the form of 'concluding observations'.

In its concluding observations on the seventh periodic report of the United Kingdom of Great Britain and Northern Ireland, July 2015, the Committee criticised the UK for its corporal punishment laws:

'The Committee remains concerned that corporal punishment is still not fully outlawed in the home and certain educational and alternative care facilities in the United Kingdom and in almost all British Crown Dependencies and Overseas Territories. It is further concerned about the lack of explicit prohibition of corporal punishment in the home and the existing legal defences of "reasonable punishment" in England, Wales and Northern Ireland or "justifiable assault" in Scotland (arts. 7 and 24).'

'The State party should take practical steps, including through legislative measures where appropriate, to put an end to corporal punishment in all settings, including the home, throughout United Kingdom and all Crown Dependencies and Overseas Territories, and repeal all existing legal defences across the State Party's jurisdiction.'<sup>20</sup>

## Human Rights Council Universal Periodic Review

The Universal Periodic Review (UPR) is a mechanism of the Human Rights Council – the UN intergovernmental body responsible for promoting and protecting human rights across the globe – which allows states to review their peers. The UK has been reviewed twice through the UPR process. In the latest review in 2012, Finland, Norway, and Sweden submitted recommendations around the UK's failure to explicitly prohibit all forms of corporal punishment.<sup>21</sup>

## Council of Europe

All 47 Council of Europe member states have signed up to the European Convention on Human Rights (ECHR) which is overseen by the European Court of Human Rights. In 1998 the European Court of Human Rights ruled that UK law did not provide adequate protection to children and effective deterrence against

treatment or punishment contrary to Article 3 of the ECHR, and ordered the UK to pay damages to the child applicant (case of *A. v. the United Kingdom*).<sup>22</sup> Article 3 of the ECHR prohibits torture and inhuman or degrading treatment or punishment.

The European Social Charter (ESC), adopted in 1961 and revised in 1996, is a Council of Europe treaty guaranteeing social and economic human rights. Article 17 of the Charter requires the legal prohibition of any form of violence against children, in any setting. In July 2012, the European Committee of Social Rights (ECSR), which monitors implementation of the Charter, concluded that:

‘...the situation in United Kingdom is not in conformity with Article 17 of the Charter of 1961 on the grounds that not all forms of corporal punishment are prohibited in the home.’<sup>23</sup>

In 2008, the Council of Europe launched the campaign ‘Raise your hand against smacking’<sup>24</sup> to challenge corporal or physical punishment and campaign for its total abolition across the 47 member states. At the time of writing, 27 Council of Europe member states have abolished physical punishment, with a further eight committed to doing so.<sup>25</sup>

## Global Initiative to End all Corporal Punishment of Children

The ‘Global Initiative to End All Corporal Punishment of Children’, launched in Geneva in 2001, was founded to act as a catalyst to encourage more action and progress towards ending all corporal punishment in all continents, to encourage governments and others to ‘own’ the issue and work actively on it, and to support national campaigns with relevant information and assistance. Its aims are supported by UNICEF, UNESCO, human rights institutions, and international and national NGOs.<sup>12</sup>

### Summary

To summarise all of the above, there is an overwhelming international condemnation of the current legal framework in Scotland and the rest of the UK, with repeated examinations having unequivocally stated the need for legal reform.

## 3.2 Policy and legislative context in Scotland

The use of physical punishment in the home and in private foster care is lawful in Scotland, as it is in the other UK jurisdictions (see summary box below for details).<sup>1</sup> This means that children do not have the same level of legal protection from violence as adults.

The law relating to the physical punishment of children was reformed in Scotland in 2003.

In response to the 1998 European Court of Human Rights ruling in the case of *A v the UK*,<sup>22</sup> the then Scottish Executive consulted on a range of proposals which sought to define ‘reasonable chastisement’ in statute, ‘in order to meet the criticism that the law fails to protect children from harsh or violent discipline’.<sup>26</sup> Whilst the consultation paper articulated the Scottish Executive’s view that ‘it would be unacceptable to outlaw all physical punishment of a child by a parent’ [as] ‘the majority of parents would not support it’,<sup>26</sup> the subsequent criminal justice bill included a provision outlawing all physical punishment of children under the age of three. This provision was later withdrawn by the Executive at committee stage. Section 51 of the Criminal Justice (Scotland) Act, 2003 retained in law a defence of ‘justifiable assault’ of a child under the age of 16 by their parent or carer, whilst outlawing certain forms of assault, namely the shaking, hitting on the head or hitting of a child with an implement.<sup>27</sup>

The Scottish Government (SG) considers the law on assault to be adequate to protect children and has expressed concern about the impact of legal reform on parents, despite the international evidence that protecting children fully in the law does not lead to trivial prosecution.<sup>28</sup> In a detailed response to the concluding observations of the UN Committee on the Rights of the Child in 2008, the Government said:

‘...[it] believes that the current position ensures that the law gives children sufficient protection without unnecessarily criminalising parents who lightly smack their child. SG does not accept that the term violence is appropriate for the low level of physical punishment for which the defence of justifiable assault is available in Scots law.’<sup>29</sup>

In a wider context however, child policy in Scotland is increasingly developed with reference to a children's rights framework. The government's overarching approach to child wellbeing ('Getting it Right for Every Child'),<sup>4</sup> which is based on the principles of prevention and early intervention long before the point of harm, is clearly articulated in terms of the right of all children to be nurtured, kept safe and have the best start in life. The National Parenting Strategy conceives of positive parenting as a right and states a commitment to:

'...embed children's rights and parents' responsibilities in everyday life, helping Scotland become a country which values and cherishes its children and young people, and properly supports parents in their caring, nurturing role.'<sup>30</sup>

The Children and Young People (Scotland) Act 2014<sup>31</sup> represents a further step towards enshrining the UNCRC in statute in Scotland, with duties on Scottish Ministers that include promoting public awareness and understanding of the rights of children and formally reporting to parliament on what they are doing, and planning to do, to secure better or further effect of the UNCRC requirements in Scotland.

## Summary of current legislation in Scotland and the rest of the UK

### Scotland

In Scotland, section 51 of the Criminal Justice (Scotland) Act 2003 provides a defence of 'justifiable assault', where 'a person claims that something done to a child was a physical punishment carried out in exercise of a parental right or of a right derived from having charge or care of the child'. The defence of justifiable assault excludes blows to the head, shaking, or the use of an implement. A 'child' is defined in section 51 as a person under the age of sixteen years.<sup>27</sup>

### England and Wales

In England and Wales, parents can use the defence of 'reasonable punishment', as long as the defendant is charged only with common assault, the victim is a child and the defendant is the parent of the child or a person acting in loco parentis. Section 58 of the Children Act 2004 states that 'battery of a child causing actual bodily harm to the child cannot be justified in any civil proceedings on the ground that it constituted reasonable punishment.' The Charging Standard states that 'for any injury to a child caused by a parent or person acting in loco parentis which amounts to more than a temporary reddening of the skin, and where the injury is more than transient and trifling, the defence of reasonable punishment is not available'.<sup>32</sup>

### Northern Ireland

The legal provisions in Northern Ireland are similar to those in England and Wales. The defence of reasonable punishment is regulated in article 2 of the Law Reform (Miscellaneous Provisions) (Northern Ireland) Order 2006, which states that 'battery of a child causing actual bodily harm to the child cannot be justified in any civil proceedings on the ground that it constituted reasonable punishment'.<sup>33</sup>

## 3.3 Findings and recommendations of the 2008 NI Review

The NI Review<sup>5</sup> was commissioned by the NICCY, the NSPCC (NI) and Barnardo's (NI), with the aim of better understanding the prevalence of physical punishment, the factors which influence its use, associated outcomes for children and the views and attitudes held by parents, children and professionals. The review focused on Western and European populations and included 138 journal articles that were published between 2000 and 2005, as well as a number of government and voluntary sector reports. The NI Review was complemented by a telephone survey among 1,000 parents of children aged 0-10 in Northern Ireland (The Northern Ireland Physical Discipline Prevalence Study).

### 3.3.1 Key findings of the NI Review

#### Prevalence of physical punishment

The review included studies from the UK, the USA, Canada, Italy, Germany and Sweden. The reported prevalence of physical punishment ranged from 45% in Sweden to between 70 and 80% in the UK. Some of these studies were however not representative and of questionable validity.

#### Factors influencing the use of physical punishment

The review found that the use of physical punishment was influenced by a range of interrelated parent, child, family, community, and cultural factors. Parent factors included younger age, gender (mothers for minor punishment and fathers for more severe forms of punishment), poor maternal physical and mental health, alcohol/drug abuse, parents' own experience of physical punishment in childhood, and endorsement of physical punishment as a discipline strategy. Younger children and boys were more frequently subjected to physical punishment. Other child risk factors were poor child health or developmental delay, disability, and behavioural problems. Family risk factors were a higher number of siblings, single parenthood, marital conflict, low levels of social support, lower socio-economic status and high work stress. Community and cultural factors included neighbourhood deprivation, high crime levels, communities where physical punishment was normative, and residence in a country where physical punishment is legal.

#### Outcomes of physical punishment

Outcomes of physical punishment were categorised into two main groups: the Anti Physical Discipline Perspective and the Conditional Physical Discipline Perspective.

*Anti Physical Discipline Perspective:* The majority of the reviewed studies concluded that physical punishment is associated with adverse short- and long-term outcomes for children's health and development, and should never be used. Negative outcomes included increased aggression and anti-social behaviour, mental health and emotional problems, poorer parent-child relationships, decreased moral internalisation, increased risk of perpetrating abuse towards partners and children in adulthood, and risk of escalation into maltreatment and abuse. The evidence of detrimental outcomes was stronger for severe forms of physical punishment.

*Conditional Physical Discipline Perspective:* A small group of US researchers postulate that the use of 'non-abusive' physical discipline under controlled circumstances is not causally related to harmful effects. They defined 'conditional spanking' as the spanking of children aged 2-6 years, with an open hand, less than once a week and as a backup to milder tactics such as time out.<sup>34,35</sup> Proponents of this perspective agree with the Anti Physical Discipline Perspective on the damaging effects of severe and frequent physical punishment, and acknowledge the possibility that controlled spanking might escalate into more severe forms of punishment. The NI Review criticised the conditional perspective for its narrow definition and prescriptive nature, which makes controlled spanking impractical and puts children at risk of escalation.

The main limitations of the studies on child outcomes were the predominance of correlational research and the failure to discriminate between 'ordinary' and severe forms of physical punishment.

#### Attitudes towards physical punishment

Physical punishment, and harsher forms especially, tended to be viewed negatively by parents in Western and European countries. However, parents who disapprove of physical punishment may still use it in stressful situations. The Northern Ireland Physical Discipline Prevalence Study showed that parents often used physical punishment when they were frustrated, and often felt guilty afterwards.<sup>5</sup> Research on the perceptions of children was scant. There was some evidence that adolescents who experienced physical punishment were more likely to endorse and 'normalise' it. In contrast, qualitative research from the UK suggested that young children view 'smacking' as hurtful and wrong.<sup>36</sup> The few existing studies on professional attitudes towards physical punishment found that views varied considerably. In a small, non-representative UK survey, a 'gentle smack' was viewed as acceptable by a majority of health professionals.<sup>37</sup>

### 3.3.2 Recommendations of the NI Review

The NI Review made the following recommendations:

- The UK government and devolved assemblies should ban all physical punishment of children.
- A legal ban should be complemented by an information campaign, aimed at providing consistent messages and information on positive parenting techniques and alternatives to physical punishment.
- Health professionals working with children should receive training on how to approach and discuss the use of physical punishment with parents, and how to advocate positive parenting.
- Family support strategies that include positive parenting techniques should be developed and evaluated.
- The use of physical punishment in the UK and public attitudes towards it should be regularly monitored.

## 3.4 Aim and research questions

The aim of this report is to provide an update of a comprehensive literature review on physical punishment, which was published by the NSPCC, Barnardo's Northern Ireland and Northern Ireland's Commissioner for Children and Young People in 2008 (NI Review).

### Research questions

1. What are the prevalence of / attitudes towards different types of parental physical punishment in the UK and other OECD countries? In particular,
  - a. What are the trends over time?
  - b. What evidence is there of changes in prevalence / attitudes in countries which have made physical punishment illegal?
2. What are the outcomes of physical punishment for child health and development, and later-life health and wellbeing?
3. Is parental use of physical punishment related to an increased risk of child maltreatment?



# 4 – Methodology

## 4.1 Design and definitions

### Design

This document provides a detailed review of the international evidence, based on the systematic search of relevant literature published since 2005.

### Definitions

The working definition of physical punishment used for the purpose of this review is the definition provided by the UNCRC (and used also in the NI Review):

“Corporal” or “physical” punishment is any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light.<sup>3</sup>

In line with the UNCRC definition of childhood, a ‘child’ was defined as anyone under the age of 18.<sup>2</sup> This review uses the term ‘physical punishment’ as this is the term that is commonly used in the UK. ‘Corporal punishment’ is the term used in the USA, but both terms have the same meaning and can be used interchangeably as indicated in the UNCRC definition.

## 4.2 Inclusion/exclusion criteria

Inclusion and exclusion criteria were agreed by the steering group with the aim of identifying the most relevant literature in relation to the research questions, while ensuring manageability.

### Inclusion criteria

The review examined studies conducted in OECD countries (for a list of OECD countries, see Appendix 1), and published in English between January 2005 and June 2015. Included were peer reviewed research articles and review papers, and only in relation to research question 1 (prevalence of / attitudes towards physical punishment), also grey literature.

All studies that were included addressed at least one of the research questions through empirical research or through the review of empirical research, and used one or more measures of physical punishment that met the above working definition. The study populations were children up to the age of 18; adults who reported retrospectively on their experience of physical punishment in childhood; and parents who reported on the physical punishment of their own children.

All study designs were included except in relation to research question 2, on the outcomes of physical punishment for child health and development, where the search was restricted to longitudinal studies. This decision was taken to minimise the possibility of reverse causation, which is the main limitation of cross-sectional research on child outcomes of physical punishment. For example, while physical punishment might cause problem behaviour, it is also possible that parents use physical punishment in response to such behaviour. While it is generally difficult to establish causal links from observational data, it is near impossible in cross-sectional studies, where exposure and outcome are measured at the same time and therefore the direction of any association cannot be established. Longitudinal designs are superior as they allow temporality to be ascertained, i.e. that the outcome occurred after the exposure. In addition, they allow for the adjustment for initial levels of the outcome in question. Thus, in the absence of randomised controlled trials (which would of course be unethical in the context of physical punishment) longitudinal study designs are the most appropriate to approach the important issue of causality.

To ensure manageability of the vast international literature on the prevalence of physical punishment, for research that examined prevalence and attitudes in countries other than the UK, only those studies were included that had examined trends over time. However, all UK research on prevalence and attitudes was included.

## Exclusion criteria

One of the main criticisms of physical punishment research that has been voiced by proponents of conditional spanking is that some studies do not distinguish between ‘ordinary’ and overly severe forms of punishment that border on or constitute abuse. To address this argument, the current review excluded articles that focused exclusively on child abuse or maltreatment, articles that explicitly included forms of abuse or maltreatment in their definition of physical punishment, and articles that did not differentiate between verbal and physical punishment. Abuse and maltreatment were defined according to Straus’ Conflict Tactics Scales<sup>38</sup> (for a description, see section 5.2.1). Also excluded were articles on physical punishment by persons other than parents / adults living with the child, and articles that had already been included in the NI Review.

## 4.3 Search strategy

The search was carried out between April and June 2015. The following databases were searched electronically: Web of Science, PubMed, PsycInfo, and Google Scholar. In addition, the reference lists of articles identified for in-depth review were also screened.

All searches were conducted using the following search terms: ‘physical discipline’, ‘physical punishment’, ‘corporal punishment’, ‘smacking’, ‘spanking’, and ‘physical chastisement’.

The search results are shown in Figure 2. The Web of Science search returned 787 articles, of which 374 were deemed potentially relevant after title screening. The PubMed search identified a further 29 potentially relevant papers, after excluding duplicates and irrelevant titles. A further 87 articles were identified through PsycInfo. In addition to these, 25 articles were found through Google Scholar and the snowball method, taking the total of potentially relevant articles to 515. After reading all abstracts, 388 studies were excluded because they did not fit the inclusion criteria. A further 29 studies were excluded after reading the full text. The remaining 98 articles were retained for in-depth review.

## 4.4 Data extraction and critical review

For peer-reviewed studies addressing research questions 2 and 3, key information was extracted and summarised in tables (Tables S1 and S2 in supplementary document). Extracted information included: lead author; publication year; study design; study population; outcome measure(s); measure(s) of physical punishment used in the study; confounders adjusted for; key findings; and main strengths and limitations. Effect sizes were included under key findings if they had been reported in the paper in a way that is readily interpretable without knowledge of the underlying data, such as via odds ratios or percentages of a standard deviation.

Individual studies identified for in-depth review were then critically appraised using STROBE (STrengthening the Reporting of OBservational studies in Epidemiology)<sup>6</sup> guidelines to assess their reporting quality. The full STROBE criteria are provided in Appendix 2. No study was excluded because of poor quality, but main limitations were noted (see also Tables S.1 and S.2 in supplementary document) and considered when interpreting results. In particular, the appraisal considered the following questions:

- Was the sample representative of the general population where the study was conducted?
- Did the study control sufficiently for third variables that might confound the association between physical punishment and outcome? The association between physical punishment and child outcomes may appear stronger when other underlying factors that affect both (such as family background or maternal mental health) are not controlled.
- Did the study control for initial levels of the outcome in question? It might be that physical punishment is a response to existing difficult behaviour, rather than causing the behaviour (reverse causation).
- Who reported on the use of physical punishment (the exposure) and the outcome? If both exposure and outcome are reported by the same person (for example the mother), it might be that the findings are distorted (same-source bias).
- Were physical punishment or outcomes measured retrospectively? Information provided from memory might be more unreliable than information collected at the time when the behaviour occurred (recall bias).

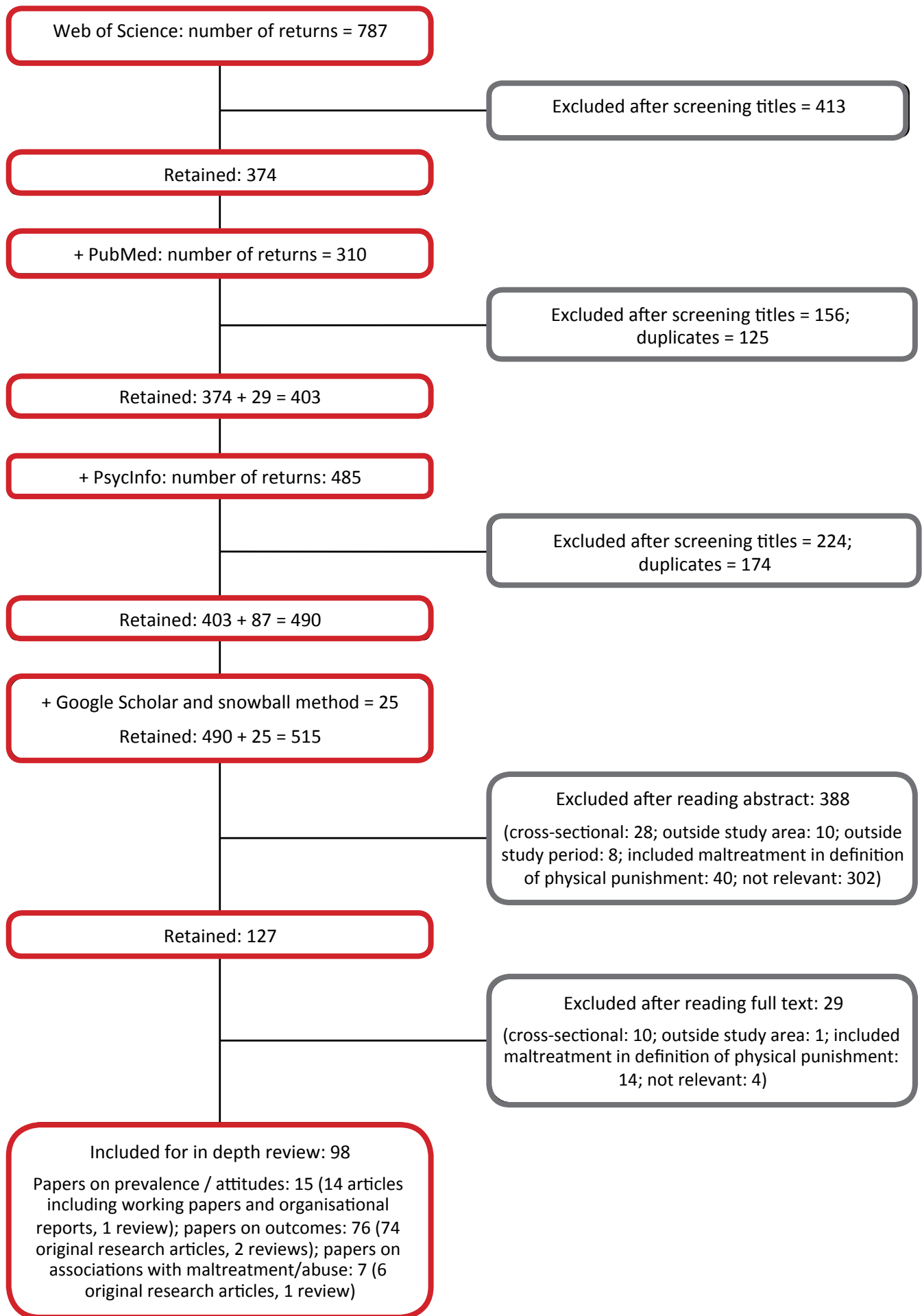


Figure 2 Flow chart showing search results.

# 5 - Results

## 5.1 Physical punishment in Scotland, other parts of the UK, and selected OECD countries: prevalence and attitudes

The following sections examine the prevalence of physical punishment in Scotland, the other UK jurisdictions and selected OECD countries, including evidence for changes in prevalence and attitudes over time (research question 1). It should be born in mind that to accurately assess trends over time, it is important that the measures used (i.e. the question wordings) are the same or very similar in meaning, and relate to children of similar age, as child age influences parents' use of physical punishment.<sup>5</sup> The availability of such data is limited.

### 5.1.1 Scotland and other parts of the United Kingdom

Evidence on the prevalence of smacking in Scotland and the UK is scarce. The search identified seven organisational and governmental reports including the NI review, one journal article and one conference abstract that were published within the review period. Their findings are summarised in Table 1 and discussed below.

#### Scotland

The available evidence for the prevalence of physical punishment in Scotland comes from the Growing Up in Scotland study (GUS), and the Millennium Cohort Study (MCS).

The GUS study is a nationally representative longitudinal study that was launched in 2005, starting with a child cohort of children born in 2002/2003 and a birth cohort of children born in 2004/2005. Three reports that include information on the prevalence of smacking have been published (Table 1).<sup>9,39,40</sup> Data collected in 2006/2007 show that the reported prevalence of 'smacking' was 34-37% in the child cohort (then about 4 years old) and about 16% in the birth cohort, who were then about 2 years old. Notably, a large majority of parents in both cohorts displayed a negative attitude towards physical punishment: in the child cohort, 79-84% of parents stated that smacking is 'not very' or 'not at all' useful, and in the birth cohort this was 84-87%.<sup>9</sup> The seventh sweep of the GUS study (data collected in 2012/2013) included information reported by the children themselves, who were then 7 years old. Fifty-six per cent of children agreed with the statement 'My parents smack me when I have done something wrong'.<sup>40</sup>

The MCS follows children born between 2000 and 2002 in all four UK countries. Published reports from the third and fourth sweeps, when the children were 5 and 7 years old, include maternal self-reports on the prevalence of smacking in Scotland. For children aged 5, 58% of Scottish mothers in the MCS reported any use of smacking.<sup>8</sup> This decreased to 48% when the children were 7 years old.<sup>41</sup>

It is currently difficult to assess trends over time in Scotland from the available reports. GUS has started a second birth cohort of children born in 2010/2011, which will allow meaningful comparisons with the earlier cohorts as these children grow up. However, the data that are presently available suggest a downward trend in the prevalence of smacking, as well as a shift in attitudes. According to a representative survey of 692 Scottish parents carried out in 2002, the prevalence of any form of physical punishment within the past year reported by parents of 3-5 year olds was 77%.<sup>42</sup> The statement, 'I don't think that smacking is a good thing to do, but sometimes parents need to do it', was endorsed by 58% of parents. In comparison, the GUS reported a prevalence of 34-37% for the smacking of 4 year olds in 2006/2007,<sup>9</sup> while the MCS found a prevalence of 58% for 5 year olds in Scotland in 2006,<sup>8</sup> as shown in Table 1. In relation to attitudes, GUS data from 2005/2006 showed that a lower percentage (42%) of parents endorsed the statement, 'It may not be a good thing to smack, but sometimes it is the only thing that will work'.<sup>39</sup>

#### Northern Ireland

The most recent evidence on prevalence and attitudes in relation to physical punishment in Northern Ireland comes from the Northern Ireland Physical Discipline Prevalence Study, the results of which were

reported in the NI Review.<sup>5</sup> Conducted in 2006, the study found that among the 1,000 sampled parents of under 10 year olds, 47% reported to have used some form of physical punishment. The study also highlighted parents' ambivalence towards this practice. Although almost half of the surveyed parents reported to have used physical punishment, approximately three in five parents did not think that it leads to positive outcomes, and three in five parents thought that it 'frequently' or 'always' results in feelings of guilt or regret.

Another NI study analysed data from wave three of the 2003 Northern Ireland Household Panel Survey, and found that the prevalence of physical punishment was highest among the parents of children aged 4-7, with 56% of parents reporting to use it.<sup>43</sup>

## UK as a whole

A UK-wide study on MCS data analysed a sample of 6,674 children who were followed through the ages 3, 5 and 7, between the years 2004 and 2008.<sup>44</sup> The prevalence of any smacking as reported by the mother was highest when the children were 3 years old (66%) and decreased as they got older (56% at age 5 and 48% at age 7). However, when looking across time, it emerged that only 20% of all children had never been smacked at any point between the ages 3 and 7. These findings highlight that cross-sectional snapshots are very likely to underestimate children's lifetime experience of smacking.

Trends over time in the prevalence of physical punishment in the UK were directly examined in research carried out on behalf of the NSPCC.<sup>7</sup> Two cross-sectional surveys conducted in 1998 and 2009 compared the rates of physical punishment reported by young adults aged 18-24. Both surveys measured physical punishment using identical questions. Sample sizes were 2,869 in 1998 and 1,761 in 2009. The results showed a marked decline in physical punishment (Figure 3). In 1998, 61% of young adults reported that they had been smacked on the leg, arm or hand in their childhood, while in 2009 this was true for 43%. Physical punishment 'on a regular basis' during childhood was reported by 10% of young adults in 1998, but by only 3% in 2009.

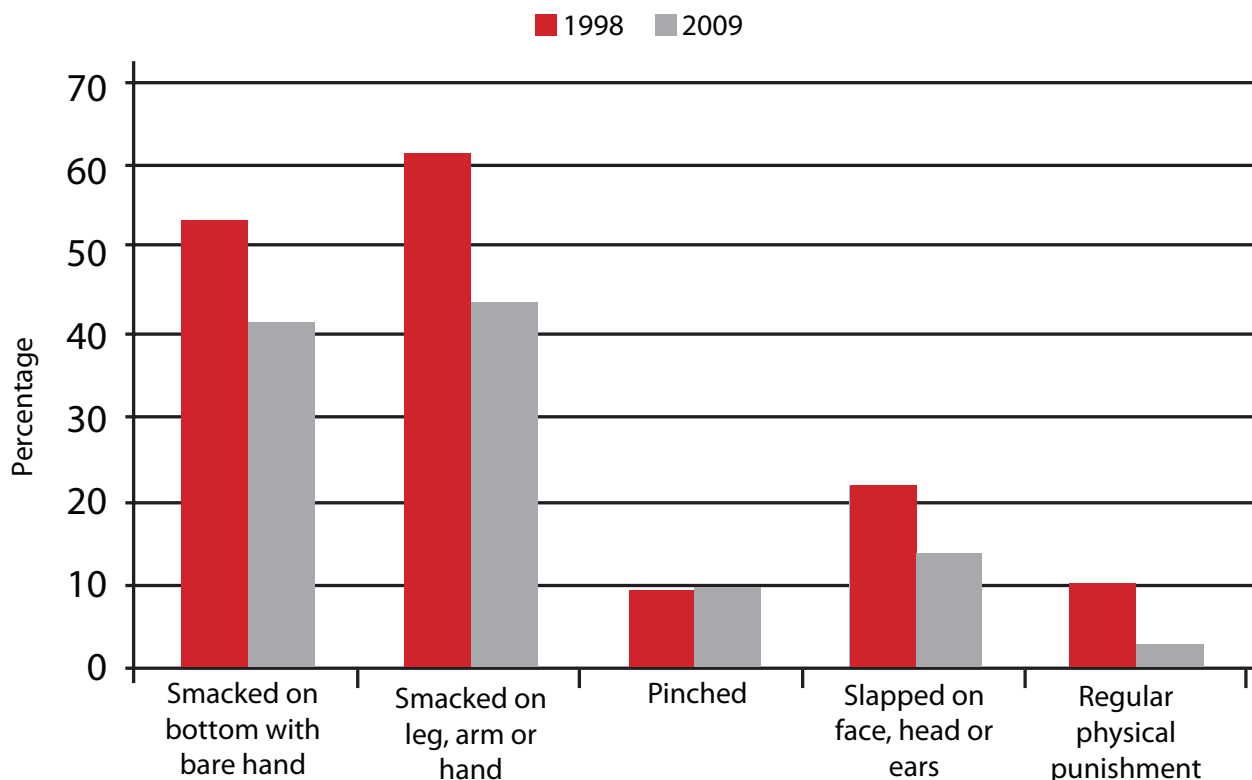


Figure 3 Prevalence of different forms of physical punishment in the UK, reported retrospectively by young adults in 1998 and 2009 (Figure produced using data reported in Radford et al.<sup>7</sup>).

**Table 1 Prevalence of physical punishment in the UK**

Country	Data collection	Prevalence of physical punishment	Study population	Study
Scotland	2005/2006	Parental endorsement of smacking "It may not be a good thing to smack, but sometimes it is the only thing that will work" – agree / strongly agree): Child cohort (born 2002/2003): 42% Birth cohort (born 2004/2005): 30%	Growing Up in Scotland study: 1st sweep; 2,858 children aged 34.5 months = child cohort; 5,217 children aged 10.5 months = birth cohort; parental report	Anderson et al. <sup>39</sup>
Scotland	2006/2007	Child cohort (born 2002/2003) Ever used smacking: Respondent: 34% Partner: 37% Smacking not very / not at all useful: Respondent: 84% Partner: 79%  Birth cohort (born 2004/2005) Ever used smacking: Respondent: 16% Partner: 16% Smacking not very / not at all useful: Respondent: 87% Partner: 84%	Growing Up in Scotland study: 2nd sweep; 1,998 children aged 46.5 months = child cohort; 3,765 children aged 22.5 months = birth cohort; parental report	Bradshaw et al. <sup>9</sup>
Scotland	2006; 2008	"How often do you smack (child) when he/she is naughty?" Any smacking reported: Age 5: 58% Age 7: 48%	Millennium Cohort Study: children born between 2000 and 2002; sweep 3 (1,752 children aged 5 years) and sweep 4 (1,555 children aged 7 years)	Hansen and Joshi <sup>8</sup> Hansen et al. <sup>41</sup>
Scotland	2012/2013	"My parents smack me when I have done something wrong" Any smacking (child report, age 7, born 2004/2005): 56% (prevalence for parent reported smacking not reported)	Growing Up in Scotland study: 7th sweep; 3,279 children aged 7 years and 10 months = birth cohort born 2004/2005	Parkes et al. <sup>40</sup>
Northern Ireland	2003	Ever "spanked or slapped" the child: Age 0-3: 40% Age 4-7: 56% Age 8-11: 40% Age 12-15: 20%	Northern Ireland Household Panel Survey: wave 3; 1,629 children aged 4-7 years	Lloyd and Devine <sup>43</sup>
Northern Ireland	2006	Whether parent had ever used physical discipline (smacked on bottom with bare hand; slapped on the hand, arm or leg; slapped on the face, head or ears; hit on the bottom with object; pinched; shook child aged two and older): 47%	Northern Ireland Physical Discipline Prevalence Study: telephone survey of 1000 parents of 0-10 year olds	Bunting et al. <sup>5</sup>
UK	1998; 2009	<b>1998</b> Smacked on bottom with bare hand: 53% Smacked on leg, arm or hand: 61% Pinched: 9% Slapped on face, head or ears: 21% Physical punishment on a regular basis: 10% <b>2009</b> Smacked on bottom with bare hand: 41% Smacked on leg, arm or hand: 43% Pinched: 9% Slapped on face, head or ears: 13% Physical punishment on a regular basis: 3%	NSPCC: Random probability samples of young adults (aged 18–24 years) reporting retrospectively on childhood experiences; N in 1998= 2,869; N in 2009= 1,761	Radford et al. <sup>7</sup>
UK	2004; 2006; 2008	"How often do you smack (child) when he/she is naughty?" Any smacking reported: Age 3: 66% Age 5: 56% Age 7: 48% Never reported smacking at any age: 20%	Millennium Cohort Study: children born between 2000 and 2002 followed from age 3 to age 7 years; N= 6,674; maternal report	Heilmann et al. <sup>44</sup>

## 5.1.2 Cross-country comparisons in Europe: Austria, France, Germany, Spain, and Sweden

The German Research Foundation funded a five-nation comparison study to assess the effects of banning physical punishment as well as the role of information and education campaigns on the prevalence of physical punishment and public attitudes towards it.<sup>45</sup> The survey was carried out between October 2007 and March 2008, and included a random sample of 1,000 parents in each country. All parents were older than 25 years and had children younger than 18.

The five selected countries were chosen to reflect the heterogeneous legal situation in Europe. At the time of the survey, the circumstances in the surveyed countries were as follows:

**Austria:** Prohibition of physical punishment was introduced in Austria in 1989, but this was not accompanied by nationwide information campaigns.

**France:** In France, physical punishment is legal. At the time of the survey, there had been no nationwide campaigns on the risks of physical punishment or campaigns promoting alternative, positive parenting practices.

**Germany:** Physical punishment was banned in Germany in 2000, and the ban was publicised through a nationwide multimedia strategy which was however limited to the years 2000 and 2002.

**Spain:** Spain introduced a ban on physical punishment in 2007, after data collection for the survey. However, Spain had run information campaigns on the risks of violent childrearing since 1998.

**Sweden:** Sweden is the country with the longest standing ban of physical punishment, which was introduced in 1979. Large-scale nationwide awareness campaigns have publicised the change in the law directly after its introduction and have continued over generations, including information provided directly to children.

### Prevalence of physical punishment

Parents were asked about the following forms of physical punishment: a mild slap on the face, a slap on the bottom, spanking the bottom with a hand, a resounding slap on the face, beating with an object and severe beating. As expected, the lowest levels of physical punishment were found in Sweden. Rates in Austria and Germany were similar to each other but considerably higher than in Sweden. Spain had the second highest and France had the highest rates of physical punishment (Figure 4). The data were also examined by parent age, providing a picture of trends in the use of physical punishment across parent generations (Figure 5). A clear trend across generations of parents for a rise in nonviolent childrearing can be seen in Sweden and also in Germany, whereas there appear to be no clear trends in Austria, Spain and France.

### Attitudes towards physical punishment

In all five countries, attitudes towards physical punishment were overwhelmingly negative. Most parents agreed that nonviolent childrearing is the ideal, ranging from 93% in Sweden to 82% in France. Most parents believed that talking to the child is better than physical punishment (Sweden: 94%, France: 83%), and that hitting teaches children that it is right to use physical force (Sweden: 78%, France: 66%). However, parents in France differed markedly from parents in the other countries regarding the belief that the 'use of drastic childrearing measures is indispensable' – this was endorsed by 43% of parents in France, whereas endorsement in the other countries ranged from 14% in Sweden to 19% in Austria. Large between-country differences were apparent in parents' views of what constitutes violence: for example, a slap on the face was considered to be violence by 85% of Swedish parents but only by 32% of parents in France (Figure 6).

The report also included longitudinal evidence from an earlier study in Germany, showing that it takes time to change beliefs about what is legally permissible. In 2001, shortly after the prohibition of physical punishment, 61% of German parents still believed that it was legal to administer a 'mild slap on the face'. By 2005 this had declined to 48%; and by 2008 approval had dropped to 25%.

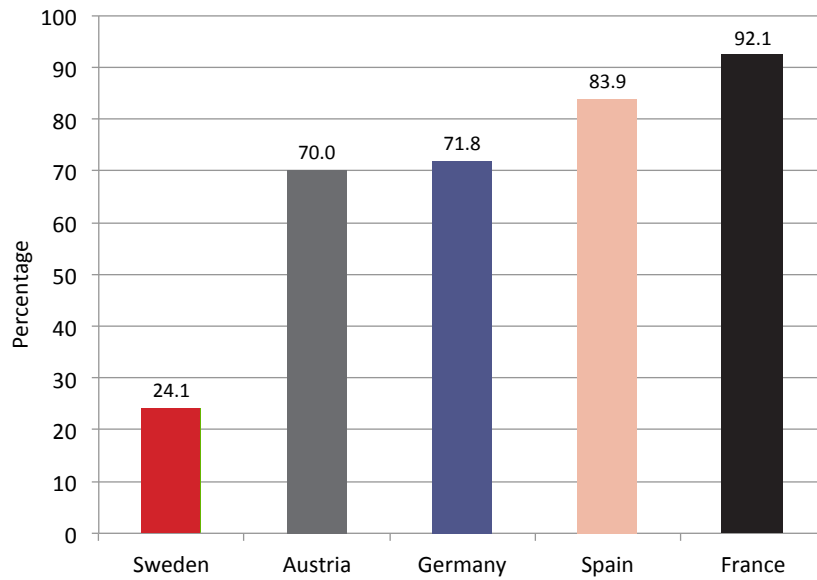


Figure 4 Parent-reported prevalence of any form of physical punishment in 2007, by country (Figure produced using data reported in Bussmann et al.<sup>45</sup>).

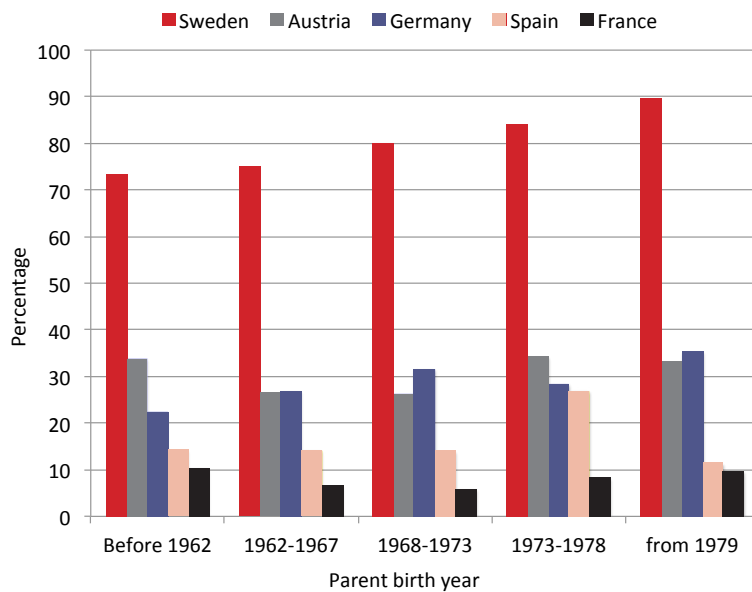


Figure 5 Parents reporting to rear their children without any form of physical punishment in 2007, by country and parental birth year (Figure produced using data reported in Bussmann et al.<sup>45</sup>).

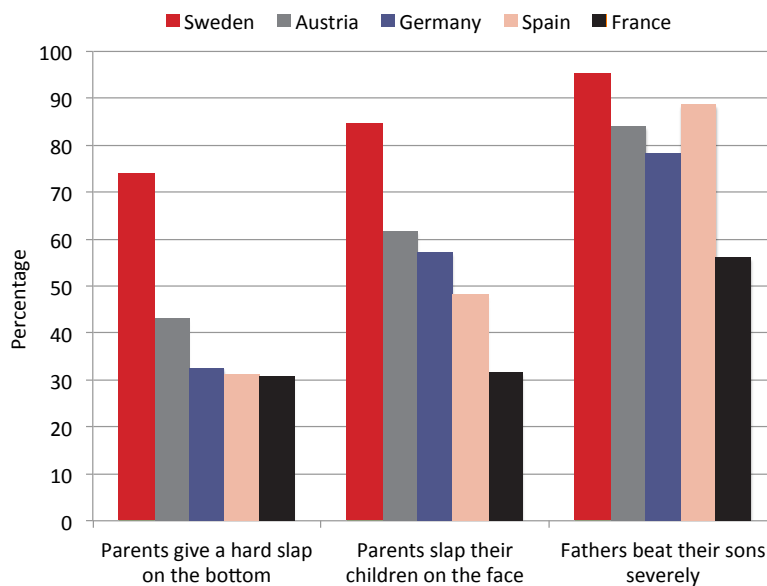


Figure 6 Percentage of parents considering these types of physical punishment as violence in 2007, by country (Figure produced using data reported in Bussmann et al.<sup>45</sup>).



Overall, the authors of the report concluded that ‘there can no longer be any doubt about the violence-reducing effect of a ban on childrearing violence’.<sup>45</sup> The Swedish examples show how Swedish parents have internalised the prohibition of physical punishment over the 30 years since its introduction, including the notion that all physical punishment constitutes violence. The cross-country comparisons showed that in all surveyed countries, a large majority of parents strives to rear their children without the use of physical punishment, and that the combination of law reform and intensive, long-term public education is more effective in changing attitudes and behaviours than either strategy alone.

### 5.1.3 USA and Canada

Zolotor et al.<sup>46</sup> examined trends over time in the use of corporal punishment in the USA (the only country that has not ratified the UNCRC), where physical punishment is legal. The study used data from four cross-sectional population surveys that were conducted between 1975 and 2002. Study populations were parents of 3-11 year olds, and sample sizes were 671 in 1975; 1,616 in 1985; 522 in 1995; and 705 in 2002. All four surveys had used comparable (but not identical) items from Straus’ Conflict Tactics Scales<sup>38</sup> to measure physical punishment. Overall, there was a downward trend in physical punishment, with slapping or spanking reported by 77% of parents in 1975, and 62% in 2002. However this decline was not observed among children aged 3-5, for whom rates remained high (79% in 2002). Also, the percentage of parents who reported hitting with an object appeared to have increased from 19% in 1975 to 34% in 2002. The authors concluded that rates of physical punishment in the USA have remained unacceptably high over almost 30 years from 1975 to 2002.

In Canada, where physical punishment is also still legal, Fréchette and Romano<sup>47</sup> explored time trends in physical punishment using nationally representative data from eight cycles (1994 to 2008) of the Canadian National Longitudinal Survey of Children and Youth. Physical punishment was assessed with the question, ‘How often do you do each of the following when your child breaks the rules or does things that he or she is not supposed to: use physical punishment?’ The Canadian data showed declines in the reported use of physical punishment for children aged 2-5, with a decrease from about 50% in 1994/1995 to about 25% in 2008/2009. Among 6-9 year olds, prevalence declined from 38% in 1994/1995 to 23% in 2008/2009.

Another Canadian study conducted in Quebec compared rates of physical punishment of children under the age of 18 between the years 1999, 2004 and 2012.<sup>48</sup> Physical punishment was defined as any of the following: spanking; slapping on the hand, leg, or arm; pinching; and shaking over the 12 month period preceding the interview. Mothers reported on practices used by themselves and any other adult in the household. Results showed that physical punishment rates had declined from 48% in 1999 to 43% in 2004, and dropped further to 35% in 2012. The authors concluded that in Canada, attitudes towards physical punishment are slowly changing and are becoming increasingly negative.

### 5.1.4 Systematic review of laws, attitudes and behaviours in countries with a legal ban

Zolotor and Puzia<sup>49</sup> undertook a systematic review of the laws, and changes in attitudes and behaviours in the 24 countries where physical punishment was banned at the time of their review (up to 2009).

The authors noted that all countries that had enacted a ban had elected or representative forms of government, and that the rate of new countries introducing legal bans had accelerated since the year 2000. Where trend data were available, studies showed that public support for and prevalence of physical punishment declined before the introduction of legal bans and continued to decline afterwards, suggesting that sufficient public support is important for legislation to be passed. However, there was evidence that legislation reinforced and accelerated the declines in the prevalence of physical punishment.

The relationship between physical punishment bans and rates of child abuse was difficult to assess, firstly because little research was available, and secondly because the increased public awareness following a legal ban may result in increases in reported abuse because of changes in reporting behaviour. The studies that had been conducted suggest a decline in severe physical abuse in countries where physical punishment is prohibited.

The review also provided information on the possible consequences of breaking the law. In Sweden, physical punishment can incur penalties that may include a fine or up to six months in prison. However, the law states that it will not prosecute unless the crime is serious in nature – highlighting the educational rather than prosecutorial aim of the Swedish legislation.

Overall, the authors found that legal bans of physical punishment are associated with declines in the prevalence as well as public acceptance of such practice. They concluded that, given the lack of demonstrated benefits of physical punishment, the ‘balance of beneficence rests with an end to corporal punishment.’<sup>49</sup>

### Key messages

- In many countries, including the UK, the prevalence of physical punishment is declining and public attitudes have shifted, with the use of physical punishment becoming less and less acceptable and a high proportion of parents doubting its usefulness.
- There is convincing evidence that declines in physical punishment are accelerated in countries that have prohibited its use, and that such laws have important symbolic value.
- Legal bans in many countries have been implemented without a majority of public support.
- There is evidence that the passage of legislation in combination with public awareness campaigns leads to a change in public attitudes.

## 5.2 Impact of physical punishment: evidence from longitudinal research

This section reviews the evidence on the outcomes of physical punishment for child health and development, as well as later-life health and wellbeing (research question 2). It is organised as follows: Section 5.2.1 provides an overview of the studies included for in-depth review. Section 5.2.2 summarises the findings of two relevant review articles that have been published within the review period. The remaining sections then present a detailed review of the identified original research articles, grouped by the outcome studied.

### 5.2.1 Overview

The search for longitudinal studies on the outcomes of physical punishment identified one meta-analysis<sup>50</sup> and 74 original research articles (details of individual studies are summarised in Table S.1, supplementary document). Also published within the review period was one relevant narrative review which included both cross-sectional and longitudinal research.<sup>51</sup> Narrative reviews are not necessarily based on a systematic literature search, however they provide a useful overview of important research findings and the main issues and arguments on the topic. The vast majority of these studies and reviews were conducted in the USA.

The identified articles analysed a wide range of child and adult outcomes. By far the most frequently studied outcome was childhood problem behaviour or externalising behaviour, which was examined in 55 studies. Externalising behaviour is defined as negative behaviour directed at the external environment.<sup>52</sup> The second most frequently studied outcome (19 studies) was childhood emotional and mental health (or internalising behaviour), including measures of depressive symptoms, anxiety, withdrawal and somatic complaints. Other outcomes studied were childhood cognitive ability / school engagement (seven studies), childhood pro-social behaviour (two studies), the quality of the parent-child relationship (three studies), adult mental and physical health (10 studies), substance abuse (four studies), and adult partner relationships / intimate violence (three studies).

## Commonly used measures of physical punishment

The most frequently used instrument to measure physical punishment was Straus' parent-child Conflict Tactics Scales (CTSPC).<sup>38</sup> The CTSPC core questionnaire consists of 22 items across three subscales, these are (1) Non-violent Discipline; (2) Psychological Aggression and (3) Physical Assault. The Physical Assault subscale is further divided into the following three severity levels:

**Minor assault (corporal punishment) includes:** spanking on the bottom with bare hand; hitting on the bottom with belt, hairbrush, stick or other hard object; slapping on the hand, arm or leg; pinching; shaking (scored as very severe if the child is younger than 2 years).

**Severe assault (physical maltreatment) includes:** slapping on the face, head or ears; hitting on some other part of the body besides the bottom with hard object; throwing or knocking child down; hitting with a fist or kicking hard.

**Very severe assault (severe physical maltreatment) includes:** beating the child up as hard as (you) could; grabbing around the neck and choking; burning or scalding; threatening with a knife or gun.

Another frequently used concept in US research articles is 'spanking'. Spanking is usually defined as 'a mild open-handed strike to the buttocks or extremities'.<sup>50</sup> In the UK, the commonly used equivalent is 'smacking'. However, most studies did not provide any definitions and left the meaning of the terms 'spanking' and 'smacking' open to parents' own interpretations.

## Commonly used analysis techniques

The majority of studies used advanced statistical analysis techniques such as Structural Equation Models (SEM). For the analysis of longitudinal data, SEM have several advantages over regression models. In particular, they allow for the simultaneous modelling of direct and indirect pathways. Cross-lagged path analysis is a form of SEM that models how two factors influence each other over time. These models compare the extent to which physical punishment predicts changes in children's problem behaviour over time to the extent to which children's problem behaviour predicts changes in physical punishment over the same period.<sup>11</sup> They are the most appropriate method when there is reason to believe that the relationship between two variables might be reciprocal, as it is likely for the association between physical punishment and child problem behaviour.

### 5.2.2 Review articles

#### Narrative review of the research, legal and human rights aspects of the physical punishment debate

In a comprehensive review article published in 2007, Gershoff and Bitensky<sup>51</sup> reviewed the research, legal and human rights aspects of the corporal punishment debate in the USA. They noted as a telling peculiarity of the debate surrounding corporal punishment that it is focused mainly on the potential for unintended negative effects, rather than on whether corporal punishment is effective in achieving parenting goals. Following their review of the research evidence, which was based on Gershoff's meta-analysis<sup>53</sup> published in 2002 and complemented with findings from later studies, Gershoff and Bitensky<sup>51</sup> came to the following conclusions:

- There is little evidence that corporal punishment works. It is not effective in achieving parenting goals of increasing children's moral internalisation and decreasing their aggressive and antisocial behaviour.
- While children with more behavioural problems elicit more corporal punishment from their parents, once these child effects are accounted for, corporal punishment still predicts behaviour problems.
- There is evidence that corporal punishment is related to other unintended outcomes including impaired mental health, the erosion of parent-child relationships, and adult aggression and antisocial behaviour. However, the authors pointed out that these associations were less clear and under-researched.
- Children who are physically punished are more likely to be physically abused. The authors highlighted evidence that most physical abuse starts out as physical punishment in the attempt to correct misbehaviour, where the punishment escalates in force and intensity.

On reviewing the legal situation in the USA and the human rights perspective on corporal punishment, Gershoff and Bitensky<sup>51</sup> expressed concern that current legal provisions in the USA, which permit certain forms of physical violence against children but not others, are confusing and send out mixed messages. They concluded that corporal punishment is a violation of children's human rights and should be banned outright.

## Systematic review and meta-analysis of longitudinal studies

Ferguson<sup>50</sup> conducted a systematic review and meta-analysis of longitudinal studies on the associations between physical punishment and three outcomes: externalising (aggression, antisocial behaviour) and internalising (depressive symptoms, anxiety) behaviour problems, and cognitive performance. Studies that focused exclusively on severe child abuse were excluded. Forty-five studies published between 1975 and 2010 met the inclusion criteria. Pooled effect sizes were estimated separately for spanking and corporal punishment, for both unadjusted associations as well as associations controlled for initial levels of the outcome variables. For the unadjusted associations, the meta-analysis found non-trivial long-term detrimental effects across all three outcome measures. For adjusted associations, effect sizes were small but remained statistically significant. Effect sizes appeared to be larger for older than for younger children, suggesting that physical punishment becomes more adverse with age. The author concluded that the negative impact of spanking and corporal punishment on the examined outcomes was minimal.

### 5.2.3 Childhood externalising behaviour problems

'Externalising behaviour' refers to behavioural problems where the child is acting in a negative or destructive way towards the external environment, broadly manifesting as aggression, delinquency, or hyperactivity.<sup>54,55</sup> It includes psychiatric disorders such as Attention Deficit Hyperactivity Disorder (ADHD), conduct problems (refusal to follow rules and the frequent violation of social norms and the rights of others)<sup>55</sup> and Oppositional Defiant Disorder (disobedient, hostile, and defiant behaviour directed towards authority figures).<sup>56</sup>

Of 55 original studies on externalising behaviour, the overwhelming majority (42 studies) found that physical punishment predicted increases in externalising behaviour, including aggression and conduct problems,<sup>57-92</sup> increases in delinquency and antisocial behaviour<sup>93-96</sup>; lower trustworthiness<sup>97</sup>; and higher levels of Oppositional Defiant Disorder.<sup>98</sup> The results of nine studies were mixed<sup>99-107</sup>; and four studies did not find an association between physical punishment and behaviour problems.<sup>108-111</sup>

All but four<sup>69,70,79,92</sup> of the 42 studies that reported a detrimental effect of physical punishment controlled for the influence of initial (baseline) levels of the problem behaviour in question. These adjustments are very important for the validity of the results because they minimise the possibility of reverse causation, i.e. that the association could be due to a 'child effect' – the difficult temperament of the child eliciting the punishment from the parent. However, the adjustments could potentially lead to an underestimation of the true association if the child's behaviour at baseline was already negatively influenced by the earlier occurrence of physical punishment.

## UK studies

Only two studies on problem behaviour came from the UK. They are reviewed here in more detail as they are of particular interest to the debate in Scotland. Both studies were based on the aforementioned Growing Up in Scotland study (GUS).

A study by Wilson et al.<sup>92</sup> examined factors related to early conduct problems. The study included 2,070 Scottish children who participated at ages 3, 4 and 5. The outcome measure was parental report of conduct problems (abnormal scores on the conduct scale of the Strengths and Difficulties Questionnaire) at all three time points ('persistent conduct problems') or at one or two time points ('inconsistent conduct problems'). Physical punishment was measured at age 3, by asking parents whether they agreed or disagreed that smacking is sometimes necessary. Smacking was endorsed by 42% of respondents (own

calculation). Parents who endorsed smacking at age 3 were about 30% more likely to report inconsistent conduct problems over the 3-year study period (adjusted odds ratio = 1.28). The study controlled for a wide range of family background characteristics and other potential risk factors, however due to way the outcome was measured, no adjustment could be made for initial levels of conduct problems.

Scott et al.<sup>88</sup> analysed data from the same study, including 1,600 Scottish children followed from age 2 to age 4. The outcome of interest was the presence of emotional and behavioural problems at age 4, measured via the Total Difficulties scale of the Strengths and Difficulties Questionnaire. In this study, physical punishment was measured at age 2 by asking the main caregiver whether they had ever smacked the child. Initial levels of emotional and behavioural difficulties were controlled by excluding children whose parents reported any concerns about the child's behaviour at age 2. The prevalence of smacking children at age 2 in the remaining sample was 20%. Children who had been subjected to smacking during their first two years were more than twice as likely to display emotional and behavioural problems at age 4 than children who had not been smacked, after allowing for the influence of known confounders including parental mental health and educational attainment, sibling number, changes in family structure and area deprivation (adjusted odds ratio = 2.29).

## Factors influencing the impact of physical punishment: gender, age and maternal warmth

Some studies suggested that physical punishment was more detrimental for boys than for girls,<sup>61,83,94,95</sup> however other studies which examined the role of gender did not find differential effects.<sup>71,78,81,85,97</sup>

The meta-analysis by Ferguson<sup>50</sup> concluded that the effects of physical punishment were more pronounced for older than for younger children. Only three original articles reported on the role of child age – two of them observed greater negative effects from physical punishment for older children,<sup>95,100</sup> however one study found that the association between physical punishment and conduct problems dissipated with age.<sup>86</sup>

Proponents of the conditional spanking perspective sometimes suggest that physical punishment is not harmful if it occurs in a controlled manner in the context of a loving and overall positive family environment.<sup>50,112</sup> The role of maternal warmth and responsiveness was tested in eight studies, however with conflicting results: three studies found less adverse effects of physical punishment on problem behaviour in the presence of high levels of maternal warmth,<sup>61,74,106</sup> while five studies reported that maternal warmth did not mitigate the detrimental effects of physical punishment.<sup>59,75,85,89,91</sup>

## Evidence of a dose-response relationship

Studies that had more detailed data on the frequency of physical punishment experienced by the child tended to find a dose-response relationship: the more frequently the parent(s) used physical punishment<sup>64,66,77,80,81</sup> or the longer the time period over which physical punishment occurred<sup>79</sup>, the worse was the subsequent problem behaviour. For example, one study estimated that each additional spanking was associated with a 5% standard deviation increase in externalising behaviour problems over time.<sup>66</sup> Another study reported that compared to no spanking at age 3, children who had been spanked on average 1-2 times a month were 40% more likely to display aggressive behaviour at age 5 (adjusted odds ratio = 1.40), while children who had been spanked more than twice a month were 100% more likely to show aggressive behaviour two years later (adjusted odds ratio = 2.01).<sup>77</sup>

## Studies measuring reciprocal effects

Studies that examined reciprocal effects between physical punishment and behavioural problems provide valuable insights into the transactional nature of the relationship. Fourteen studies used cross-lagged path models to simultaneously assess the strength of the association in both directions. Eleven of these studies found evidence for reciprocal effects after controlling for initial levels of both physical punishment and behavioural problems.<sup>57,59,62,65,67,72,75,76,78,82,91</sup> Two studies reported that physical punishment predicted problem behaviour but not the other way around,<sup>63,93</sup> and one study found only cross-sectional associations.<sup>101</sup>

The overall picture that emerges from this body of research is one of amplifying transactional processes. There is good evidence for reciprocal effects, where physical punishment is exacerbating existing problem behaviours, which are then met with more physical punishment, resulting in further increased problem behaviour – thus fuelling a vicious circle. Further, there is evidence for the risk of escalation from milder to harsher forms of physical punishment over time: one study found that compared to no spanking, mild spanking was associated with a 50% increase in risk of subsequent harsh spanking.<sup>101</sup>

## Experimental research

Strong evidence for a causal relationship between physical punishment and behavioural problems comes from a randomised study that evaluated the effectiveness of a US parenting programme (Incredible Years Parent Training Program), which explicitly aimed to reduce the use of physical punishment including slapping, spanking, hitting, and physically restraining the child, and to increase supportive parenting.<sup>58</sup> The study included 514 families with children who met criteria for oppositional defiant disorder (ODD) and conduct disorder (CD), and at baseline were 3-8 years old. Children and mothers were assessed at three time points via maternal reports and observations: pre-intervention, post-intervention and at one year follow-up. The study evaluated different combinations of parent training, child treatment and teacher training. Interventions that included parent training conferred the most consistent positive effects. But the most striking finding was that lower levels of physical punishment at baseline and a reduction in the use of physical punishment following the intervention were associated with better treatment responses i.e. larger reductions in conduct problems and externalising behaviour.

## Gene-environment interactions

Another noteworthy study used DNA samples from 250 male participants in the US Child Development Project to test the influence of genetic risk on the association between physical discipline and externalising behaviour.<sup>64</sup> Participants were assessed annually from age 6 to age 22. The results showed that the negative effect of physical punishment on child aggression was greater in the presence of genetic risk. Monoamine oxidase A (MAOA) is an enzyme that plays a key role in the catabolism (breaking up) of neurotransmitters and has been linked to increased aggression. The study found that for boys carrying the high risk form of the gene that encodes MAOA, the adverse effects of physical punishment were exacerbated, i.e. they responded to physical punishment with higher levels of aggression than boys who were similarly subjected to physical punishment but carried the low-risk form of the gene. Findings such as this might explain why not all children experience equally detrimental effects from physical punishment.

### 5.2.4 Childhood emotional and mental health

Childhood emotional and mental health, or internalising behaviour, includes depressive symptoms, anxiety, withdrawal, and somatic complaints (i.e. physical symptoms such as headache or stomach-ache that are medically unexplained). Out of 19 original research studies, 10 studies found evidence for detrimental effects of physical punishment on the following outcomes: overall internalising behaviour,<sup>63,67-69,82,87</sup> depressive symptoms,<sup>91</sup> emotional problems<sup>88,99</sup> and anxiety.<sup>74</sup> Five studies reported mixed results,<sup>84,100,106,113,114</sup> and four studies found no associations.<sup>66,104,108,115</sup>

All studies on childhood emotional and mental health came from the USA, except one that was conducted in the UK. This was the research by Scott et al.<sup>88</sup> on the Growing Up in Scotland Prospective Study. Scott et al.<sup>88</sup> used a composite measure of both emotional and behavioural problems and reported a detrimental effect of physical punishment before age 2 on Total Difficulties at age 4. A more detailed review of this study can be found in the previous section on problem behaviour (section 5.2.3).

## Factors influencing the impact of physical punishment: gender, age, and maternal warmth

No study reported on potential gender differences in the association between physical punishment and internalising behaviour. The results from two studies suggested that physical punishment may be more detrimental at older ages also for children's emotional and mental health.<sup>63,100</sup> However, one study found adverse effects only among very young children.<sup>84</sup>

Two studies assessed the role of maternal warmth. One cross-national study found evidence for a protective effect of maternal warmth in relation to the negative impact of corporal punishment on child anxiety, however with significant between-country variability.<sup>74</sup> The other study reported that maternal warmth did not moderate the association between physical punishment and depressive symptoms among adolescents.<sup>91</sup>

### Studies measuring reciprocal effects

The presence of reciprocal effects was tested in four studies,<sup>63,67,82,91</sup> but not supported in any of these. This makes intuitive sense – as noted by Gershoff and Bitensky<sup>51</sup> it is unlikely that parents would respond to symptoms of anxiety or depression with increased physical punishment. There is therefore no evidence for 'child effects' or reverse causality in relation to internalising behaviour.

While the results for associations between physical punishment and childhood emotional and mental health are less consistent than is the case for externalising problem behaviour, the totality of the evidence, also in light of the findings from earlier reviews,<sup>5,50,51,53</sup> points towards the presence of a true link between physical punishment and child mental health.

### 5.2.5 Childhood cognitive ability / school engagement

The seven studies on cognitive ability and school engagement produced somewhat conflicting results. Three studies reported associations with physical punishment,<sup>80,108,116</sup> results from two studies were mixed,<sup>100,106</sup> and two studies (both conducted on the same sample) did not find an association.<sup>81,82</sup>

All studies were conducted in the USA. One study that was based on a large, nationally representative sample reported that physical discipline around age 5 was associated with lower fifth grade maths achievement but not with reading, after adjusting for a wide range of potentially confounding factors but not for baseline math scores.<sup>108</sup> An association with both maths and reading scores was supported in another large study, for two different age cohorts, adjusted for baseline ability and with a dose-response relationship.<sup>116</sup> The third study that had reported a detrimental effect of physical punishment found that high frequency maternal spanking at age 3 was associated with significantly lower vocabulary scores at age 5 after controlling for age 3 vocabulary.<sup>80</sup>

A small study that reported mixed results found that physical punishment was related to lower academic rank only if it continued into adolescence, however this study used a self-reported measure of academic achievement and may have been subject to reporting bias.<sup>100</sup> The other study with mixed results analysed the effect of parenting styles on school engagement among African American children, grouping each of the classic styles (authoritative, authoritarian, permissive and neglectful) into two subgroups based on whether parental use of physical punishment was low or high. The most effective parenting style in relation to school engagement was authoritative parenting with low physical punishment, while authoritative parenting with high physical punishment was second best. However, the study did not distinguish between parents who did and did not use physical punishment, and none of the styles with high physical punishment was associated with better outcomes when compared to its counterpart.<sup>106</sup>

The two studies that did not find a relationship between physical punishment and cognitive ability had both tested links with vocabulary scores among the same low-income sample, one study examining 5 year olds<sup>82</sup> and the other 9 year olds.<sup>81</sup>

### **5.2.6 Childhood pro-social behaviour**

Children's pro-social behaviour (behaviour that benefits other people or the community, such as helping, sharing, co-operating, and volunteering) was examined in only two studies, both were conducted by proponents of the conditional spanking perspective.<sup>100,113</sup> Baumrind et al.<sup>113</sup> assessed patterns of parental authority including 'normative' and 'severe' physical punishment on adolescent's communal competence, in a small sample of 87 children followed from preschool to early adolescence. After adjustment for socio-economic family background, 'normative' spanking was reported to be neither detrimental nor beneficial, while severe physical punishment was related to reduced communal competence.

Gunnoe<sup>100</sup> analysed data from 158 adolescents aged 13-18 and reported that age-delimited spanking (not beyond age 12) was associated with more volunteer work among youth compared to no spanking, but this did not hold after controlling for parenting style. Spanking beyond age 12 was related to less volunteering.

### **5.2.7 Parent-child relationships**

Three studies assessed parent-child relationships, all finding a negative impact of physical punishment.<sup>71,117,118</sup> Lansford et al.<sup>71</sup> modelled trajectory groups of physical punishment among a small sample of boys followed from age 5 to age 15. Parent-adolescent relationship quality was assessed by maternal report and direct observation. Compared to moderate/decreasing and high/stable physical punishment trajectories, adolescents in the minimal/ceasing trajectory group had significantly better relationships with their mothers.

Mother-child conflict at age 14 was the outcome in a study by MacKinnon-Lewis et al.<sup>117</sup>, and was measured via observational ratings of hostility and coercion. Corporal punishment was associated with hostile conflict in the mother-child relationship measured one year later, among European American but not African American families.

Mulvaney and Mebert<sup>118</sup> conducted a retrospective study among a small sample of university students. Corporal punishment by mothers during the students' childhood was associated with lower attachment to their mothers in adulthood.

### **5.2.8 Adult physical and mental health**

Among the 10 studies on adult outcomes, five assessed the impact of childhood physical punishment on adult aggression and antisocial behaviour,<sup>119-123</sup> eight assessed adult depressive symptoms,<sup>118-122,124-126</sup> two examined other mental health outcomes,<sup>120,126</sup> and one study tested links with adult physical health.<sup>127</sup>

#### **Adult aggression and antisocial behaviour**

The evidence for a link between childhood physical punishment and adult aggression and antisocial behaviour was fairly consistent. Four out of five studies supported an association, having controlled for a reasonable range of potentially confounding factors.<sup>119,120,122,123</sup> One study from Greece reported a relationship between physical punishment at age 7 and higher levels of aggression and antisocial behaviour at age 18 only for boys, while for girls being 'often' physically punished at age 7 was associated with less aggressive behaviour at age 18.<sup>121</sup>

#### **Adult depressive symptoms**

Symptoms of adult depression were examined in eight studies, with conflicting results. Childhood physical punishment predicted adult depressive symptoms in two studies which were both based on large, nationally representative US samples.<sup>119,120</sup> Three studies conducted among university students found no link between physical punishment and adult depressive symptoms.<sup>122,125,126</sup> One small study, also



on university students, reported that the perceived threat from corporal punishment was associated with more adult depressive symptoms and lower self-esteem, while there was no relationship with corporal punishment itself.<sup>118</sup> Research from Israel, again among university students, found that the impact of physical punishment was dependent on gender and ethnicity: For Jewish participants and Arab females, higher levels of corporal punishment were associated with higher levels of adult depressive symptoms, while for Arab males, higher levels of corporal punishment in childhood were related to lower levels of adult depressive symptoms.<sup>124</sup> The above mentioned study from Greece reported that for girls only, occasional physical punishment at age 7 was associated with lower internalising problems at age 18, whereas for boys there was no association.<sup>121</sup>

## Other mental health outcomes

Using data from a large, representative sample of US adults, Afifi et al.<sup>120</sup> showed that harsh physical punishment was related to an increased likelihood of most lifetime mental disorders, with odds ratios ranging from 1.36 to 2.46. Apart from depression, outcomes included mood disorders, anxiety and personality disorders. One small study among university students found evidence for associations between physical punishment and adult anxiety as well as lower self-esteem.<sup>126</sup>

## Adult physical health

Afifi et al.<sup>127</sup> assessed a wide range of adult physical health outcomes using a large, representative survey of more than 34,000 adult Americans. After exclusion of respondents who reported maltreatment or physical abuse, harsh physical punishment (pushing, grabbing, shoving, slapping or hitting by parents or any adult living in the house) was found to be related to between 20 and 30% increased odds of adult cardiovascular disease, arthritis, and obesity. However, the validity of these results was questioned in a comment by Berger and Zolotor<sup>128</sup>, who raised concerns about the way in which harsh physical punishment was operationalised.

### 5.2.9 Adult/adolescent substance abuse

Four studies on alcohol abuse were identified. There was support for a link between childhood physical punishment and adult alcohol abuse from two surveys, which were based on retrospective data, and one neuroimaging study.

Afifi et al.<sup>119</sup> showed that after controlling for socio-economic family background and parental bonding, physical punishment in childhood predicted a 30% increase in the odds of alcohol abuse in adulthood. In a later study on a different dataset, Afifi et al.<sup>120</sup> found that participants who had been physically punished in childhood were 60% more likely to suffer from both alcohol and drug dependence and abuse, after controlling for a wide range of factors including any family history of dysfunction and posttraumatic stress disorder.

Sheu et al.<sup>129</sup> carried out a neuroimaging study on a small sample of young adults. In subjects reporting harsh corporal punishment (defined as hitting on buttocks or extremities by a primary caregiver prior to age 12, about 12 times or more per year, sometimes with an implement), measurable changes in dopaminergic brain regions were observed (increased T2-relaxation time). These changes were in turn associated with the use of drugs and alcohol.

One study examined alcohol use in children, but did not find a relationship with physical punishment: Alati et al.<sup>130</sup> conducted a study among Australian children followed from birth to age 14, finding no association between mothers' reported use of smacking at age 5 and alcohol intake at age 14.<sup>130</sup>

## 5.2.10 Adult partner relationships and intimate violence

Three studies produced evidence for harmful effects of childhood physical punishment on adult intimate relationships.<sup>123,131,132</sup> Cast et al.<sup>131</sup> reported that individuals who were physically punished during childhood were more likely to engage in physical and verbal aggression with their spouses, were more controlling and were less able to take their spouse's perspective.

Two studies examined ecological survey data from the International Dating Violence Study. One study by Douglas and Straus<sup>132</sup> included close to 10,000 university students from 19 countries, and found that in universities where students reported a higher prevalence of childhood physical punishment, the prevalence of assault and injury against a dating partner was also higher. Analysing the same dataset but including data from 32 nations, Gámez-Guadix et al.<sup>123</sup> reported that frequent physical punishment was associated with increased odds for anti-social behaviour, which in turn increased the odds of verbal sexual coercion and physically forced sex for both males and females.

### Key messages

- Physical punishment is not effective in achieving parenting goals.
- There is strong and consistent evidence for a link between physical punishment and childhood aggression, antisocial behaviour and delinquency.
- There is good evidence for a reciprocal relationship between physical punishment and problem behaviour. Physical punishment exacerbates existing problem behaviour, leading to a vicious circle of cascading conflict.
- Childhood physical punishment is linked to adult aggression and antisocial behaviour, including aggression and sexual violence within intimate partner relationships.
- Physical punishment is related to depressive symptoms and anxiety among children. There is also some less consistent evidence for links with depressive symptoms and reduced self-esteem in later life.
- Other negative outcomes that were shown to be related to physical punishment are parent-child conflict, adult mental illness and adult substance abuse.

## 5.3 The link between physical punishment and child maltreatment

This section addresses research question 3, the association between physical punishment and child abuse or maltreatment. The search identified one meta-analysis and six individual studies, all of which concluded that physical punishment and child maltreatment are related.<sup>126,133-138</sup>

Of the six individual studies, three were cross-sectional,<sup>133,136,138</sup> two had used retrospective data<sup>126,134</sup> and one was a prospective cohort study.<sup>135</sup> Outcomes included parental use of severe physical violence,<sup>126,134,136,138</sup> injury requiring medical attention,<sup>133</sup> and household involvement with Child Protective Services.<sup>135</sup>

### 5.3.1 Review articles

Stith et al.<sup>137</sup> reported on a series of meta-analyses that were conducted to assess the relative importance of a wide range of risk factors for child physical abuse and neglect, including parental use of 'corporal punishment'. The meta-analysis on corporal punishment included seven studies that had been published between 1975 and 1991. All studies were based on small or very small samples, with a cumulative sample size of 703. The average effect size calculated from these studies for the association between corporal punishment and physical abuse was statistically significant and considered moderate ( $r=0.26$ ). The reviewers concluded that corporal punishment is among a range of important risk factors for child physical abuse.

### 5.3.2 Parental use of severe physical violence

All four individual studies that examined links between physical punishment and severe physical violence had used items from the physical maltreatment / severe physical maltreatment subscales of Straus' Conflict Tactics Scales<sup>98</sup>, including the following: hitting with a fist, kicking, choking, beating up, burning, hitting with an object on a part of the body other than the bottom, throwing or knocking down the child, or shaking a child aged below 2 years.

Two Canadian studies examined the retrospective reports of university students on their childhood experience of physical punishment and physical abuse.<sup>126,134</sup> Both reported only unadjusted associations between legally permissible forms of physical punishment ('spanking') and severe physical violence. Both studies found that respondents who reported that they were spanked at around age 10 were more likely to report physical abuse in childhood than those who did not experience spanking. The use of convenience samples of university students means that these results may not be generalisable, and because of the retrospective nature of the studies may be subject to recall bias.

In the US, Zolotor et al.<sup>138</sup> carried out a representative telephone survey among a large sample of mothers of children with a mean age of 9 years. The study found that mothers who reported that they or the father had spanked their child during the past year were 2.7 times more likely to report physical abuse (severe physical violence) of the child than mothers whose children had not been spanked, after adjusting for demographic and socio-economic family characteristics. Mothers who reported spanking with an object were almost nine times more likely to report abuse. Moreover, the results showed a dose-response relationship between the frequency of spanking and the odds of physical abuse: the likelihood of physical abuse increased by 3% with every additional occurrence of spanking. Although a causal link could not be established due to the cross-sectional nature of the data and possibility of same-source bias, the authors suggested that physical abuse is often the result of escalated physical punishment.

Similar results were reported in a large, nationally representative study from Finland.<sup>136</sup> The study included children up to 12 years. Mothers who reported to use 'mild' corporal punishment (defined as throwing an object, pushing or grabbing a child, pulling a child's hair, giving a child a fillip i.e. flick of the fingers) were 11 times more likely to report the use of severe physical violence, after adjustment for a wide range of potentially confounding factors. Notably, the Finnish study included slapping and hitting with an open hand under severe violence, while the Canadian and US studies did not. This difference in where the line is drawn between 'ordinary' physical punishment and severe violence is likely a result of Finland being a country with a longstanding ban of physical punishment. It also highlights the difficulty inherent in trying to make a qualitative distinction between concepts of physical punishment and physical abuse.

### 5.3.3 Child injury requiring medical attention

Data from the US Fragile Families and Child Wellbeing Study showed that infants subjected to maternal ‘spanking’ were 2.3 times more likely to sustain an injury requiring medical attention during the first year of life than those who were not spanked, even after adjusting for a wide range of child and family characteristics including infant temperament and a history of domestic violence.<sup>133</sup> The only other factor found to be associated with injury risk was maternal alcohol use. Although information on the type and cause of injury was not available, the authors hypothesised that the spanking of an infant under 1 year of age carried the risk of escalation into child abuse. Potential limitations of this study were that both physical punishment, as well as the occurrence of an injury were measured via maternal self-report, meaning these results may be conservative, and that the findings were based on a low-income sample and might therefore not be generalisable.

#### Key messages

- Physical punishment is among a range of important risk factors for child physical abuse.
- The evidence for an association between physical punishment and child maltreatment or abuse is consistent and supported by all studies that examined it.
- The use of legally permissible forms of physical punishment has been linked to increased risks for parental use of severe physical violence, injury requiring medical attention during the first year of life, and household involvement with Child Protective Services.

### 5.3.4 Involvement with Child Protective Services

In a prospective study, Lee et al.<sup>135</sup> also used the US Fragile Families and Child Wellbeing Study to examine whether the ‘spanking’ of children at age 1 was associated with household Child Protective Services (CPS) involvement between ages 1 to 5. The physical punishment measure included spanking by the mother as well as the father or the mother’s current partner. Compared to non-spanked children, families of children who were spanked at age 1 had a 33% greater probability of subsequent CPS involvement, after allowing for the influence of family background characteristics and maternal depression. The authors pointed out that CPS involvement is rare and signals serious concerns about the safety of the children in the household, and suggested that the spanking of very young children may be particularly problematic and over time may escalate into abuse. Again both physical punishment and CPS involvement were self-reported and therefore subject to possible reporting bias, meaning the strength of the association may have been underestimated.

## 5.4 Main strengths and limitations of the reviewed research

Overall, most of the studies included in this review were of good quality. Reflecting the introduction of stringent reporting guidelines in academic research over the past decade, the reporting quality was generally good, meaning that most studies provided sufficient information to allow an assessment of their validity.

The inclusion criteria meant that all studies on child and adult outcomes of physical punishment were longitudinal in design, ensuring temporality, that is, that the exposure (here, the child’s exposure to physical punishment) had occurred before the outcome was measured. Almost all studies attempted to minimise the possibility of reverse causation or ‘child effects’ (i.e. that the child’s behaviour caused the physical punishment) by taking baseline levels of the outcome of interest into account. In addition, most studies controlled for a wide range of other potentially confounding factors, including family background and maternal mental health. Many studies used advanced statistical analysis techniques, and some used information from multiple informants such as both mothers and fathers, teachers, children themselves, as well as interviewer observations. Such designs are advantageous to address concerns of same-source bias.

Sample size was an issue for about one fifth of the 74 studies that had examined the outcomes of physical punishment, these had sample sizes of less than 200 participants. The results of very small studies are less likely to be generalisable, as the study population is unlikely to be representative of the general population from which the sample was drawn. On the other hand, about 50% of the studies on child outcomes and all but one study on the link with child maltreatment had analysed samples of several thousand participants.

Studies on adult outcomes of physical punishment provide important insights, but given the scarcity of cohort studies with very long follow-ups, most of these studies are necessarily retrospective. This means that participants provide information on their experience of physical punishment from memory, with the potential for recall bias. However, research has supported the validity of adult recall of adverse childhood events.<sup>139</sup>

Of greater concern is the issue of social desirability bias, which is about the strong possibility that parents underreport their use of physical punishment. Given the changes in public attitudes towards more negative views of physical punishment, it might be that this type of bias has become more prevalent over time.

Finally, the body of evidence on physical punishment is very much dominated by US research. However, the findings from other countries tended to be similar, suggesting that the detrimental effects of physical punishment are universal.

# 6 – Discussion

## 6.1 Key findings

While the reviewed studies provided hardly any evidence for beneficial effects of physical punishment, the evidence for the potential of doing harm is strong and compelling. Research findings are consistent in relation to associations with increased childhood aggression and antisocial behaviour, which carry over into adulthood, and the especially worrying risk of escalation into physical abuse. Overall, these results provide further evidence to support and confirm the conclusions arrived at in the NI Review.<sup>5</sup>

The following sections summarise the review's key findings, linking back to the research questions the review set out to answer.

### *6.1.1 Prevalence of physical punishment and public attitudes are changing*

In many countries, including the UK, the prevalence of physical punishment is declining and public attitudes have shifted, with the use of physical punishment becoming less and less acceptable and a high proportion of parents doubting its usefulness. There is convincing evidence that these declines are accelerated in countries that have prohibited the use of physical punishment, and that such laws have important symbolic value.<sup>45</sup> Gershoff<sup>10,11</sup> pointed out that legal bans in many countries have been implemented without a majority of public support and that there is evidence that the passage of legislation in combination with public awareness campaigns leads to a change in public attitudes.<sup>10</sup>

### *6.1.2 Physical punishment is related to detrimental childhood and adult outcomes*

This report presents the findings of the extensive longitudinal research on child and adult outcomes of physical punishment published over the past decade. The vast majority of the available evidence rests on research from the USA, with only two studies conducted in the UK.

There is strong and consistent evidence for a link between physical punishment and childhood aggression, antisocial behaviour and delinquency. Most studies were of good quality, controlling for initial levels of child behaviour problems and using advanced statistical methods. Together with the results from experimental research<sup>58</sup> and gene-environment<sup>64</sup> studies, as well as evidence of a dose-response relationship<sup>64,66,77,79-81</sup> these findings suggest that the relationship is indeed causal. It is likely that children who are subjected to parental violence, even if it is low-level violence, learn that using physical force is an acceptable form of dealing with frustration. Here, the evidence of gene-environment interactions is particularly noteworthy. This and other similar findings in the literature<sup>140,141</sup> could explain why not all children respond to physical punishment with increased aggression. The literature also supports the notion of a reciprocal relationship between physical punishment and problem behaviour. Physical punishment exacerbates existing problem behaviour, leading to a vicious circle of cascading conflict. Moreover, there is fairly consistent evidence for a link between childhood physical punishment and adult aggression or antisocial behaviour, suggesting that the effects of increased aggression among children carry over into adulthood, including aggression and sexual violence within intimate partner relationships.

The detrimental effects of physical punishment extend to children's emotional and mental health. The experience of physical punishment is related to depressive symptoms and anxiety among children. There is evidence also for links with adult depressive symptoms and reduced self-esteem. However, this area has been examined only by a small number of studies, and the findings are less consistent. One study found that it was the perceived threat from parental physical punishment that was more harmful than the punishment itself – possibly because children's feelings of threat result in heightened stress levels.<sup>118</sup>

Other negative outcomes that were shown to be related to physical punishment are parent-child conflict, adult mental illness and adult substance abuse. One study suggested links with a range of adult physical health outcomes, however the quality of this study may be questionable.<sup>127</sup> Associations between physical punishment and children's cognitive ability have also been studied, but conflicting results make it difficult to draw any firm conclusions.

One argument that has been brought forward by proponents of the conditional spanking perspective is that physical punishment is not damaging if it occurs in a loving family. However, the majority of the studies that tested this hypothesis did not find evidence to support it – suggesting that maternal warmth may not override the harmful effects of parental aggression.

### **6.1.3 Physical punishment is related to an increased risk of child maltreatment**

The link between physical punishment and child maltreatment was consistently supported in all studies that tested it. Physical punishment carries a worrying and serious risk of escalation into injurious abuse and maltreatment. These findings support the notion that physical punishment and physical abuse are part of a continuum of violence, differing only by severity or degree.<sup>5</sup> The difference in how severe physical violence was defined in studies from the US and Canada versus a study from Finland (where physical punishment is prohibited, and which adopted a much stricter definition that included slapping and hitting) is an important reminder of the arbitrariness of trying to distinguish between concepts of physical punishment and physical abuse, and how such definitions are shaped by societal attitudes and the environment in which people live.

## **6.2 Strengths and limitations of this review**

### **Strengths**

The current review has a number of important strengths. First of all, the review adopted a systematic but broad search strategy and therefore provides a comprehensive and detailed picture of the most relevant research that has been published over the past decade. The inclusion and exclusion criteria ensured that two of the most common criticisms in relation to research on physical punishment have been addressed. For the review of the child and adult outcomes of physical punishment, only longitudinal studies were included, ensuring temporality and minimising the possibility of reverse causation (see also section 5.4). Further, the review excluded studies that did not distinguish between physical punishment and physical abuse, ensuring that the conclusions are applicable to what is commonly understood as 'normative' use of physical punishment such as slapping, smacking and spanking.

The studies included in this review were critically reviewed and their limitations highlighted to aid the fair assessment of the currently available evidence. Summary tables provide detailed information about all included original research articles including important design elements and main strengths and limitations (see supplement).

In addition to reviewing the effects of physical punishment, the review presents evidence on recent trends in prevalence and attitudes, including evidence on the effects of legislation enacted in many countries that prohibit its use.

### **Limitations**

It is however important to acknowledge the limitations of this review. Due to time constraints and limited resources, the review was restricted to articles from OECD countries published in English, therefore it is possible that important information has been missed. For the same reasons it was also not feasible to conduct a quality assessment of the included research by more than one independent reviewer. The review did not examine the predictors of physical punishment, as it was felt that these have been addressed sufficiently in earlier research, and that it was more important to focus on good-quality evidence for the impact of physical punishment and the trends in prevalence and attitudes over time.

## 6.3 Recommendations for future research

Several authors have highlighted that the debate around physical punishment has moved beyond discussions of research evidence for causal detrimental effects to those of ethics and human rights.<sup>51,142-144</sup> In light of the current and earlier reviews that have been conducted on the topic of physical punishment, and given that the vast majority of this extensive literature converges towards concluding that physical punishment is harmful and dangerous, the available evidence is certainly strong enough to support its legal prohibition.

Further research is needed, however, in the form of monitoring the prevalence of physical punishment and public attitudes towards it, and in particular in the form of interventional designs aimed at reducing it, at both individual and population level. The latter is important to find out how best to provide parents with good-quality support, and which strategies are most effective in changing attitudes and behaviours.

## 6.4 Policy recommendations

The policy recommendations that follow from the evidence presented in this report are similar to those formulated by the 2008 NI review:

1. All physical punishment of children should be prohibited by law. Children should be afforded more, not less, protection from violence than adults.
2. Legislation should be accompanied by large-scale information and awareness campaigns to inform the population of the merits of positive parenting and the harm caused by physical punishment. These should be aimed at different levels: individuals, communities and the whole population.
3. It is important to support parents in using positive parenting strategies, through providing information via different channels (GP's, health visitors, schools, mass media), as well as through offering parenting programmes.
4. Organisations and professionals concerned about child welfare, including teaching, health and social care professionals, as well as charity organisations, need to be galvanised and should engage in advocacy and lobby strategies to call on policymakers for an urgent change in legislation to end all physical punishment of children.



# 7 – Conclusion

The results of the current review echo the findings of the numerous reviews and analyses that have preceded it. The evidence for harmful effects of physical punishment is strong and consistent, and the declines in the use of physical punishment in countries where it is prohibited make a compelling case for the introduction of such legislation.

The current laws across the UK allowing physical punishment of children in the home and in private foster care should be challenged from both a human rights and a child wellbeing perspective. The international human rights consensus on physical punishment is clear: repeated examinations of UK laws have stated in unequivocal terms the imperative of legal reform to protect all children against all forms of physical punishment in all settings. The Scottish Government's position that allowing a low level of physical punishment sufficiently protects children, and that it does not constitute violence, contradicts the evidence base that physical punishment carries a serious risk of escalation into injurious abuse, and is out of step with its preventative approach to child wellbeing. The perception that legal reform risks criminalising parents must be weighed against the real, evidence based risk to children of retaining a defence in the law allowing their justifiable assault.

Research papers commonly conclude that 'more research is necessary'. However, when the existing evidence is as strong as it is in the case of physical punishment, and given that physical punishment is a clear human rights violation, there seems to be little value in calling for more research on its effects. To borrow Gershoff's<sup>11</sup> words: 'We know enough now to stop hitting our children.'

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# Appendices

## Appendix 1: List of OECD countries

1. Australia
2. Austria <sup>b</sup>
3. Belgium
4. Canada
5. Chile <sup>b</sup>
6. Czech Republic
7. Denmark <sup>a</sup>
8. Estonia <sup>a</sup>
9. Finland <sup>a</sup>
10. France
11. Germany <sup>a</sup>
12. Greece <sup>a</sup>
13. Hungary <sup>a</sup>
14. Iceland <sup>a</sup>
15. Ireland
16. Israel <sup>a</sup>
17. Italy <sup>c</sup>
18. Japan
19. Korea
20. Luxembourg <sup>a</sup>
21. Mexico <sup>b</sup>
22. Netherlands <sup>a</sup>
23. New Zealand <sup>a</sup>
24. Norway <sup>a</sup>
25. Poland <sup>a</sup>
26. Portugal <sup>a</sup>
27. Slovak Republic <sup>b</sup>
28. Slovenia <sup>b</sup>
29. Spain <sup>a</sup>
30. Sweden <sup>a</sup>
31. Switzerland
32. Turkey <sup>b</sup>
33. United Kingdom
34. United States

<sup>a)</sup> The country has prohibited physical punishment in all settings, including in the home.

<sup>b)</sup> The country has expressed a commitment to prohibition of all physical punishment.

<sup>c)</sup> Supreme Court rulings have declared physical punishment to be unlawful in all settings including the home but prohibition has not yet been enacted in legislation.

(Source: Global Initiative to End All Corporal Punishment of Children (2015): Global progress towards prohibiting all corporal punishment. [http://www.endcorporalpunishment.org/assets/pdfs/legality-tables/Global%20progress%20table%20\(commitment\).pdf](http://www.endcorporalpunishment.org/assets/pdfs/legality-tables/Global%20progress%20table%20(commitment).pdf))

# Appendices

A supplementary document to this report showing summary tables of individual studies can be found at:  
[www.nspcc.org.uk/equallyprotectedannex](http://www.nspcc.org.uk/equallyprotectedannex)

## Appendix 2: STROBE checklist

Title and abstract	(a) Indicate the study's design with a commonly used term in the title or the abstract (b) Provide in the abstract an informative and balanced summary of what was done and what was found
Background/ rationale	Explain the scientific background and rationale for the investigation being reported
Objectives	State specific objectives, including any prespecified hypotheses
Study design	Present key elements of study design early in the paper
Setting	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	(a) <i>Cohort study</i> - Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up <i>Case-control study</i> - Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls <i>Cross-sectional study</i> - Give the eligibility criteria, and the sources and methods of selection of participants (b) <i>Cohort study</i> - For matched studies, give matching criteria and number of exposed and unexposed <i>Case-control study</i> - For matched studies, give matching criteria and the number of controls per case
Variables	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	Describe any efforts to address potential sources of bias
Study size	Explain how the study size was arrived at
Quantitative variables	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	(a) Describe all statistical methods, including those used to control for confounding (b) Describe any methods used to examine subgroups and interactions (c) Explain how missing data were addressed (d) <i>Cohort study</i> - If applicable, explain how loss to follow-up was addressed <i>Case-control study</i> - If applicable, explain how matching of cases and controls was addressed <i>Cross-sectional study</i> - If applicable, describe analytical methods taking account of sampling strategy (e) Describe any sensitivity analyses
Participants	(a) Report numbers of individuals at each stage of study - eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram
Descriptive data	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders (b) Indicate number of participants with missing data for each variable of interest (c) <i>Cohort study</i> - Summarise follow-up time (eg, average and total amount)
Outcome data	<i>Cohort study</i> - Report numbers of outcome events or summary measures over time <i>Case-control study</i> - Report numbers in each exposure category, or summary measures of exposure <i>Cross-sectional study</i> - Report numbers of outcome events or summary measures
Main results	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period

Other analyses	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Key results	Summarise key results with reference to study objectives
Limitations	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation from similar	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results studies, and other relevant evidence
Generalisability	Discuss the generalisability (external validity) of the study results
Funding	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based









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