

Sport and recreation programmes can prevent boredom, teach important life skills, divert young people from crime and foster social inclusion

An illustration showing a yellow knife, a blue handgun, and three blue evidence markers on a light blue background. The markers are numbered 1, 2, and 3. The word 'CE' is written in the bottom left corner.

one mile radius

Kickz uses football to work with hard to reach young people in deprived areas across the UK. In New Eltham, youth crime has been reduced by 66% within a 1 mile radius of the Kickz site. Every £1 invested has generated £7 of value for the state and local community.



PHYSICAL ACTIVITY, ANTISOCIAL BEHAVIOUR AND CRIME

INTRODUCTION

Antisocial behaviour and crime have an enormous impact on our society. The 2011 London, Birmingham and Manchester riots exemplify how antisocial behaviour and crime can ruin people's lives and threaten an area's sense of safety. The definition of antisocial behaviour is broad, including criminal and non-criminal activities such as noise pollution, aggressive behaviour, vandalism and drug dealing. The Crime and Disorder Act (1998) defines antisocial behaviour as action that *"caused or was likely to cause harassment, alarm or distress to one or more persons not of the same household as himself [the perpetrator]"*. Between January and November 2011 there were 2.6 million recorded instances of antisocial behaviour in England and Wales. This accounts for two fifths (41.2%) of all crime, with 6.4 million other instances of crime recorded for this time period (UK Crime Stats, 2012). These statistics may not be an accurate picture of the scale of the problem given that it is thought that up to 80% of some types of antisocial behaviour go unrecorded and it is possible that a single incident can be recorded more than once through different agencies (Audit Commission, 2009).

Of the 1,664 antisocial behaviour orders (ASBOs) issued in 2010, a third (32.2%) were to people aged between ten and 17 (ten is the minimum age of criminal responsibility in England and Wales) (Ministry of Justice, 2011b). For the 12 months ending June 2011 there were 1.3 million offenders convicted of a criminal offence and 68,200 were aged between ten and 17 (Ministry of Justice, 2011a). Yet when it comes to physical activity and antisocial behaviour or crime, the focus tends to fall with young people and young offenders. Perhaps this is because it is easier to modify behaviour in young people or because 75% of those aged 10-17 who have completed a custodial sentence are reconvicted within a year of being released (Independent Commission on Youth Crime and Antisocial Behaviour, 2010), and three in four (75%) 18-20 year old men are reconvicted

within two years of being released (Natale, 2010a). In short, when exploring the issue of young people and crime or antisocial behaviour it's all about life chances, and the sooner changes can be affected the better the overall impact.

Scott et al. (2001) conducted a longitudinal study with 142 individuals who had antisocial behaviour in childhood to assess the financial costs of these individuals over time. They concluded that, *"antisocial behaviour in childhood is a major predictor of how much an individual will cost society. The cost is large and falls on many agencies, yet few agencies contribute to prevention, which could be cost effective"* (Scott et al., 2001, n.p.). Similarly, the London School of Economics' examination of the costs of youth disadvantage in the UK proposes that, *"becoming a young offender can be a one-way ticket to further exclusion. Young offenders are much more likely to be unemployed than their peers and, as a result, more likely to re-offend. Multiple exclusions stalk young offenders, even those with the best intentions to reform, severely damaging their chances of a decent future. The total bill for youth crime is therefore something that plays out over a number of years, with costs compounding with every conviction and reconviction"* (London School of Economics, 2007, p.28). In 2009 offending by young people was thought to cost the economy between £8.5 and £11 billion (Ministry of Justice, 2010). It is estimated that if one in ten young offenders received effective support to divert them away from a life of crime it would save over £113 million a year (Audit Commission, 2009). Diverting young people away from crime also has health benefits for young people. Men aged 16-19 years old who have been sentenced are six times more likely to be depressed than the general population at this age: 6% of all men aged 16-19 have depressive symptoms compared to 36% of sentenced male young offenders. For women of

this age group the chances are five times higher for offenders, with 11% of women in the general population at this age suffering depressive symptoms compared to 51% of sentenced female young offenders (Office for National Statistics, 2000).

38% of people believe that the Government's main priority for sport funding should be targeted at using sport to reduce crime and improve education. More people believe this than believe that sport funding should be used in any other area (YouGov, 2011, cited in Centre for Social Justice, 2011). Youth crime and antisocial behaviour are complex social issues and there are many different identified risk factors including social and economic disadvantage, low educational attainment, poor social and emotional skills, living in a deprived area, poor parenting and poor parental mental health (Independent Commission on Youth Crime and Antisocial Behaviour, 2010; Audit Commission, 2009; Stevens, Kessler and Gladstone, 2006). Sport and physical activity alone clearly cannot completely solve something with so many interrelated risk factors. The evidence available shows that physical activity and sport can influence youth crime and antisocial behaviour in a number of ways. On one hand, physical activity can create a diversion from undertaking in criminal behaviour – the most famous example of this (covered later in this section) is probably the Midnight Basketball programme in America which took off in the 1990s. Seven out of ten teenagers believe antisocial behaviour occurs because young people are bored, and six out of ten say that there isn't enough for young people to do in their area (Nestlé Family Monitor, 2002 and 4Children, 2007, cited in Audit Commission, 2009).



PHYSICAL ACTIVITIES HAVE THE ADVANTAGE OF CREATING A DIVERSION FROM BOREDOM

Physical activities have the advantage of both creating a diversion from boredom and providing an engaging setting in which to work on improving the other risk factors relating to crime and antisocial behaviour, for example through providing workshops to enhance employability and develop emotional skills. Physical activity can also help to increase self-esteem, develop relationships and social skills, foster discipline and teach commitment. Such values may ultimately lead to modified behaviour amongst individuals who have previously committed crimes (see Oughton and Tacon, 2007). In addition, long term activities and programmes can lend themselves to progression as a volunteer or coach, which can increase an individual's confidence, self-esteem, sense of community and belonging and enhance employment prospects (Centre for Social Justice 2011; Audit Commission, 2009). Finally, it should be noted that elite sport is able to promote positive messages and support or run programmes that young people will value and respect.

What is clear is that in order to reach these goals and so influence antisocial behaviour and crime, physical activities must be delivered in a way that is structured and relevant to the needs of the problem. All of the routes outlined above require sport and recreation to be targeted appropriately to those either at risk of committing a crime or act of antisocial behaviour or those who have already done so. As a result research in this area is largely focused on specific sporting or recreational intervention programmes as opposed to membership of a sports club, independent exercise or randomised controlled trials.

CASE STUDIES OF PHYSICAL ACTIVITY INTERVENTIONS

Following the 2011 riots in the UK, the Chief Cultural and Leisure Officers Association produced guidance on the role of culture and sport in reducing crime and antisocial behaviour on the grounds that, *"focused work with young people on the cusp of offending or involved in low level offending can significantly reduce enforcement costs"* (Chief Cultural and Leisure Officers Association, 2011, p.9). They argue that sport and culture are ideally placed to engage young people at risk of committing crime and acts of antisocial behaviour because they lend themselves to informal, short-term activities and create a natural environment for interaction between different generations. Furthermore, there is evidence (as discussed in the chapter on social cohesion) that physical activity can contribute to cohesive communities by bridging divides and challenging fears. Whilst the Chief Cultural and Leisure Officers Association paper doesn't deal with the effectiveness of sport and culture separately, it includes seven case studies for each to demonstrate the evidence base for the contribution sport and culture can make.

Focusing on the sports projects included, the most detailed analysis comes from a project run by Broxbourne Council. Broxbourne in Hertfordshire suffered high levels of antisocial behaviour, with 20% of all crime in the area accounted for by criminal damage. The Council supplemented existing skate parks with a network of kickabout courts and introduced informal sports sessions at the new venues; attendance at these venues was reported to be 27,348 young people in 2010/2011. Focusing on an 800 metre buffer zone around the places where diversionary activities had been installed, in comparison to the five months prior to the installation antisocial behaviour had reduced by an average of 5%. The summary argues that when compared to changes in antisocial behaviour at an overall county level there is no correlation suggesting that reductions near to intervention sites have occurred independently and are therefore attributable to the activities and facilities offered. However, one site actually saw an increase in antisocial behaviour incidents and another only a decrease by one incident whilst the other two sites saw a decrease of 131 and 53 incidents, suggesting disparity between the facilities and activities. Further research exploring this range in impact may give a greater indication of what the most successful elements of the project were. Additionally, greater analysis of changes in crime and antisocial behaviour in the rest of the borough might provide useful insight for refining future projects. From the information detailed it appears that the intervention in Broxbourne was largely successful because it provided a facility for young people to use within their community which they respected and didn't want to vandalise, rather than as a result of any long-term changes in behaviour or attitude.

In 27 target locations within Eastleigh Borough Council, Park Sport 2011 provided 334 sessions during a five week period of the summer holidays in which 16 activities (including BMX, football, skateboarding and laser clay) were on offer to young people aged between eight and 16.

Analysis of the 2009 programme showed a 29% decrease in antisocial behaviour in identified hot spots. The Chief Cultural and Leisure Officers Association do not give data for 2011, unfortunately. Another programme targeting crime hot spots is the Cheshire-based Street Sports, which has had over 24,000 young people attend since 2007. During the period that Street Sports offered activities in one area the reported number of antisocial behaviour incidents in one month fell from 24 to three. A target group of young offenders also reduced their involvement in crime, with one individual who had committed three crimes in the five months prior to the programme having no further apparent involvement in crime. Some participants also volunteered in the running of sessions, with over 3,000 voluntary hours given during the programmes existence. This volunteering experience led to a number of the participants gaining sports qualifications and entering paid employment. Whilst the numbers presented in this case study are quite vague and it is uncertain what the long term changes to behaviour are, a programme that enhances opportunities for employment can be enormously beneficial in the prevention of crime given that 67% of offenders are unemployed at the time of imprisonment (Department for Innovation, 2009, cited in Natale, 2010b).

Another Street Sports project offered tag rugby to 8-12 year olds in areas of deprivation in Aylesbury during a ten week period in the summer of 2010. 670 people attended the sessions in total and reports of antisocial behaviour fell by between 10.5% and 35% in the targeted areas when compared to the same time period in 2009. Interestingly, the two areas with the lowest participation rates saw the lowest reduction in antisocial behaviour, suggesting more of a relationship between taking part in activities and antisocial behaviour reduction than evidenced with the Broxbourne council project.

Disappointingly, however, most of the case studies selected in the Chief Cultural and Leisure Officers Association guidance are neither robust nor evidence the impact that sport and recreation can make on reducing crime and antisocial behaviour. One example summarises a four day dance project with eight prisoners in Stoke Prison. The recorded outcomes are that 90% felt they had learnt new skills, 50% received a confidence boost, 75% had discovered something they liked doing and 50% felt an improvement in their physical fitness. Given the small sample and short duration of the intervention, these statistics are not particularly meaningful. Furthermore, there is no evidence of how, or even if, these correlate with an improvement in chances of re-offending. A cricket programme in Essex, using the game as a hook to engage young people, is analysed through anecdotal evidence and feedback from coaches and police. It was observed that the behaviour of the participants had improved during the programme as they began to be more punctual and address the coaches by name rather than as “Geezer”. No information about sample size is given but there are now over 100 Street20 cricket teams thought to demonstrate the appeal of the sessions.

These case studies demonstrate the all too common issues with evaluating physical activity projects aimed at reducing crime and/or antisocial behaviour, that, *“even the projects with well-trained and dedicated coaching staff, whose efforts are widely appreciated by both participants and key stakeholders, have difficulty showing their effectiveness to the levels that are often required by evaluators”* (Centre for Social Justice, 2011, p.28). Not only does evaluation and monitoring not tend to fall into the design or budget of the project, it is also difficult to isolate the specific impact of the programme. The only scientific way to do so would be through randomised controlled trials, which would place some people in a control group for comparative purposes. However, with interventions for affecting the life chances of potential young offenders, randomised controlled trials are ethically questionable. A full and thorough evaluation would also need to be longitudinal to assess the impact of the programme on the life chances and risk of offending in the future. Little data on specific projects to this extent currently exists due to the fairly recent trend to both fund and evaluate sports-based programmes for reducing youth crime, although some scientific studies have focused on understanding the relationship between physical activity and antisocial behaviour and these are covered later in this chapter.

Qualitative evidence provides a richness and depth of understanding of the circumstances of those involved. It can be fascinating and insightful, but alone it cannot provide concrete or generalisable results about the effectiveness of a programme. The Centre for Social Justice (2011) has attempted to better understand and demonstrate the value of sporting programmes for improving crime and antisocial behaviour amongst young people. They identify two categories of barriers to proving the effectiveness of sports programmes: political and technical. Politically they highlight that when trying to secure funding, project managers can over-emphasise the potential benefits of their programme. This can then lead to unrealistic expectations of the effectiveness that the programme needs to demonstrate. A lack of clarification in the objectives of the programme can also be an issue, particularly if due to changes in government priorities the key objectives need to change. Finally, and perhaps critically, the desire for funders to have quantifiable results encourages projects to focus on easy measures such as number of courses run and number of attendees rather than what is important to measure like reductions in crime or improvements in life opportunities. The Audit Commission (2009) highlights that when a project sets a number of objectives to satisfy a number of funders then likelihood of measuring, yet alone achieving all of them is reduced. From a technical perspective, The Centre for Social Justice also argues that there are difficulties with identifying a point in time when the impact of a project should become clear and with isolating this impact from other factors. Finally, a lack of funding or resources for evaluating can prevent it from taking place properly or even taking place at all. Based on these political and technical barriers, the Centre for Social Justice emphasises the importance of sports programmes, clearly defining the problem they are tackling and how they aim to do so using sport.

This approach is also key in ensuring that programmes are appealing and relevant for those most likely to commit crimes and acts of antisocial behaviour. If a project doesn't appeal to the very people it's trying to engage then it is unlikely to be successful.

MIDNIGHT BASKETBALL

One of the earliest and most well-known programmes to utilise sport in a targeted and appealing way to combat crime and antisocial behaviour was the Midnight Basketball programme in America, which took off in 1989. This programme was conceived by an American named Standifer, who believed that the solution to inner city crime was to provide poor, young, predominantly black men with something safe and constructive to do between 10pm and 2am – the “high crime” hours. The original Midnight Basketball was targeted at men aged 17-21, took place only after 10pm and required the presence of two uniformed police officers during each game. Although kick-started under George Bush, the idea gained political momentum with Bill Clinton's support in the mid-1990s and became the focus of several research papers (Farrell et al., 1996; Derezotes, 1995; Mendel, 1995) and much media coverage at the time. The notoriety of Midnight Basketball emerged because the idea was new, relatively low cost, practical and easily possible in existing facilities. It was also claimed to be enormously successful, with Standifer crediting it for a 30% drop in crime in Glenarden, Maryland during the first three years (cited in Hartmann and Depro, 2002) and Farrell et al. (1996) claiming the same level of reduction in crime from the Milwaukee programme.

However, the early analysis of Midnight Basketball was largely qualitative, reporting the benefits of participation as including enjoyment, reduced inter-gang violence, building new relationships, skills development and new work and scholarship opportunities (Derezotes, 1995). Where claims of reductions to crime rates had been made they were not based on robust evaluations and could therefore not be considered conclusive. In addition, during the 1990s there was a global trend of declining crime levels and the small numbers impacted by Midnight Basketball could not have been causing the overall effect (Hartmann and Depro, 2002). Vocalisations of these criticisms led to a development of the Midnight Basketball programme into a more rounded intervention with workshops on important life skills and counselling. More than 20 years later Midnight Basketball programmes in one guise or another are running across the globe – from the UK to Australia. More work has also been done on identifying the effectiveness of Midnight Basketball. In 2002 Hartmann and Wheelock carried out ethnographic and qualitative research on a Minneapolis Midnight Basketball programme, which was not the success they had originally hoped for but which still produced some valuable findings. Hartman and Wheelock (2002) proposed four potential explanations for why the basketball programmes were successful. The first was that sport is character building in that basketball teaches self-discipline and bestows self-esteem, cultivating the virtues of being hard-working and abiding by the rules amongst a group that previously lacked these. The second was that sport is a catalyst for social mobility through the opportunities it can present: opportunities such as academic scholarships, coaching qualifications and work officiating games. Thirdly, sport is a medium for social control because it emphasises discipline and surveillance at a time when otherwise the participants would be committing crimes; ultimately this could lead to a new moral code in participants. Finally, sport is a hook for young men to be connected with educational and employment opportunities.

It was intended by Hartmann and Wheelock that their research would identify what the crucial components from these models were for the success of the programme, but they were unable to do so due to the poor delivery of the particular programme they were evaluating. The findings instead were almost as interesting. The Minneapolis program was poorly orchestrated because ultimately a lack of resources resulted in unsatisfactory planning and the accompanying life skills curriculum was so ineffectively delivered that for all intents and purposes it wasn't delivered at all.

This in itself was revealing, as where resources were limited, the primary focus had to be on delivering the basketball activity itself: this was why people were there, and why people returned to the programme week on week. As a result, the basketball league was very successful but paradoxically the bait that brought young men in to teach them positive behaviour wasn't followed up with positive behaviour. High degrees of satisfaction with the programme weren't related to the non-basketball prevention elements but to the opportunity for recreation and physical activity. In the context of the ten full court basketball playgrounds closed down in Minneapolis parks during the time of the programme, this is unsurprising. Other identified benefits of playing basketball were the networks people were able to develop, the opportunities for social interaction and an environment of support and encouragement. Although Hartmann and Wheelock didn't examine it, the choice of basketball as the particular midnight sport might also be important. Firstly it is a team sport, it is fast and inclusionary, suitable for all skill levels and only requires basketball courts and a ball to be played. Furthermore, as the Australian programme points out, not only does Midnight Basketball take place when young people could be getting into trouble, it also continues sufficiently late into the night to exhaust them rather than send them back out onto the streets pumped with energy⁵⁸.

Hartmann and Depro returned to the topic in 2006 to conduct analysis on the relationship between Midnight Basketball programmes and crime rates and dispel scepticism surrounding the intervention. After accounting for demographic variables, Hartmann and Depro found that cities with Midnight Basketball programmes experienced a 5% greater decrease in property crime compared to cities that did not run programmes. This was only found with property crime and not violent crime.

Hartmann and Depro concluded that, "*midnight basketball is somehow associated with decreased city-level property crime rates*" but that, "*a good deal more research must be conducted before we would want to argue that this relationship is stable and causal*" (Hartmann and Depro, 2006, p.192).

THE IMPACT OF PHYSICAL ACTIVITY INTERVENTIONS

So far we have seen mostly inconclusive evidence as a result of insufficient evaluation and analysis. The 2009 Audit Commission report *Tired of Hanging Around* is a comprehensive policy examination of how sport and leisure activities can prevent antisocial behaviour by young people aged 8-19 years old. Insufficient analysis was a concern for the Audit Commission too as it found that half (48%) of 20 projects used as case studies had no evidence or only anecdotal evidence of their outcomes, whilst only 27% collected evidence in a way that meant a value for money assessment was possible and only 14% gathered quantitative and qualitative data matched to their objectives. As a result, "*councils, children's trusts and crime and disorder reduction partnerships lack the performance data to make intelligent commissioning decisions about new or repeat schemes*" (Audit Commission, 2009, p.3).

Smith and Waddington (2004) sought to assess whether sporting schemes aimed at reducing crime, delinquency and drug abuse among young people are effective. They also noted a lack of built-in monitoring or evaluation for such programmes and highlight that where successes

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⁵⁸ <http://www.midnightbasketball.org.au/Pages/AboutUs.aspx>

occur it is often difficult to pinpoint the elements of the programme responsible. Citing Robins (1990) and Coalter (1989, 2001), Smith and Waddington demonstrate that these evaluative issues are not new to programmes and projects aimed at tackling delinquency or antisocial behaviour through physical activity. This is one of the main reasons why Smith and Waddington conclude that there is little evidence for the effectiveness of sport programmes in reducing crime or drug use and that where benefits can be shown, analysis of the cost-benefit ratio is missing. For example, Taylor et al. (1999) analysed the parameters of 54 physical activity programmes for young offenders who were under probation supervision in England and Wales. They explored the cost of these programmes but unfortunately not the benefits. The average cost per participant who completed the programme was £730, however there is no indication of re-offending rates for these participants to estimate the cost effectiveness of such programmes.

The recently finished two year 2nd Chance programme has examined cost-benefit to some extent. 2nd Chance used sports coaching in rugby and football to help young offenders build relationships, improve behaviour and receive guidance from mentors once released. The programme sessions lasted 12-15 weeks and qualified the prisoners with either a Level One football coaching qualification or a Level Two in First Aid and the RFU Rugby Ready coaching award. In evaluating the success of rugby and football projects at Portland Young Offender Institution, Meek (2012) has thoroughly explored the implications and effectiveness of the physical activity initiatives and reviewed the academic research context around physical activity and crime reduction. 81 prisoners participated in the 2nd Chance programme and the research; 50 of these had been released from prison in the 18 months prior to the end of the programme. 41 of the released prisoners had not re-offended at the time of the report, giving a re-offending rate of

18% for those who had been convicted of a new offence or returned to prison for breaching their licence conditions. In comparison to the wider population at Portland Young Offender Institution, the re-offending rate within one year is 48% (2011 data based on 542 prisoners), demonstrating that re-offending is reduced for the 2nd Chance prisoners (Meek, 2012). However, the small number of participants who have been in the community for a year or more from the 2nd Chance sample makes this comparison questionable, but over time more concrete data could, and if possible should, be gathered. The comparison is strengthened slightly by a close similarity in participants' offence profiles (the crime they had been convicted for) compared to the national offence profile of young adult males in prison.

Meek calculates from Ministry of Justice data that the average cost to hold someone in a Young Offender Institution is £47,137, but that this calculation is conservative given that it excludes the social costs and the actual cost of the criminal offence committed by each individual. Over two years and working with 81 prisoners, the 2nd Chance project cost £183,000 or £91,500 a year. Therefore, preventing two prisoners in one year from re-offending would result in a cost saving from the 2nd Chance programme. Taking the 50 participants who have returned to society and comparing the programme's currently evidenced re-offending rate with that of Portland Young Offender Institution at large, the nine participants who have re-offended represent a cost of £424,233, whilst 48% of the participants re-offending would have cost over £1.1 million, representing a potential saving of over £600,000 from the 2nd Chance intervention.

The success of the 2nd Chance programme seemingly comes from its integrated structure. Alongside the intrinsic activities of rugby and football themselves, the support of coaches and programme leaders, sociability with other inmates and the opportunity to learn something new were all also important factors for participants.



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Qualitative analysis revealed that the programme improved prisoners’ experiences whilst in prison through providing a means of physical and mental release, an incentive for good behaviour and a positive way to deal with the routine of prison. Participating also gave prisoners a goal to focus on and a sense of achievement as they progressed. The sports themselves seem to be key for these changes as they enhanced fitness, were enjoyable to undertake and gave prisoners a new activity to focus on.

“My time in Portland wasn’t the best time, I got into a lot of trouble. But as soon as I got into the academy it’s like something sparked, I’m playing football and I’m playing football every day. And everything that is in my mind is being pushed aside. So once I was in the academy my behaviour started to change, you could see the change in my behaviour.” (2nd chance programme participant, cited in Meek, 2012, p.23).

Physical activity specifically as the focus for this programme was also very successful because sport lends itself easily to an appropriate qualification. Leaving prison with a qualification can provide a prisoner with greater opportunities when they return to society and demonstrating proactive use of their time and skill acquisition whilst inside will make a former prisoner more appealing to employers on the outside (CIPD, 2007). In fact, one participant actually lined up a job coaching football at a club before leaving prison. The ongoing individual support of the 2nd Chance transition worker also appears to have been crucial in the positive impact of 2nd Chance, and may not have been accepted without the sporting programmes breaking down barriers. This support was in the form of letters, phone calls and visits both in custody and once released, aimed to ensure a successful move back into society for prisoners. Meek believes that these opportunities and experiences combined can reduce criminogenic factors (for example attitudes to offending, aggression management and victim empathy) in prisoners, and indeed the early evidence suggests this.

The Kickz programme, co-ordinated by the Football Foundation, also uses football to reduce crime and antisocial behaviour. However, it is an intervention rather than a rehabilitation programme and therefore targets 12-18 year olds at risk of offending in deprived areas across the UK. On three or more evenings a week Kickz sessions are delivered by a professional football club and will focus on football coaching, coaching in other sports and a range of workshops, from drug awareness and weapons to healthy eating and careers. As of 2011, more than 50,000 young people have engaged

with Kickz programmes across the UK delivered by 43 professional football clubs. On average young people involved experience 72 hours of contact time with Kickz, with the vast majority (91%) of projects taking place on a Friday and/or Saturday evening. Since the programme began in 2006 it has created 5,052 volunteers, accredited 6,827 young people and secured employment within the clubs for 398 people (Kickz, 2011).

Analysis of Kickz in Elthorne Park (North London) found that every £1 invested in the programme generated £7 of value for the state and local community, largely by reducing youth and gang violence. Since the Elthorne Park Kickz programme started, within a one mile radius of the site there has been a 66% reduction in youth crime (New Philanthropy Capital, 2011). Kickz works in both a preventative and supportive way for young people. The programme keeps the participants engaged and active during the evenings when they could otherwise be causing trouble or committing crimes, creates an opportunity for positive relationships between youth workers, the police and young people, and offers an influential way of communicating preventative messages. For young people who have or are already offending, football can foster increased confidence and the aspiration and skills to move away from crime. There are also sports qualification, volunteering and employment opportunities through the programme to give disadvantaged young people an alternative future. As with the 2nd Chance programme, having the right staff to support the programme and participants is vitally important, and so those involved in the delivery of Kickz at Elthorne Park were trained youth workers.

Whilst the New Philanthropy Capital evaluation of Kickz cannot say what changes would or wouldn't have happened in Elthorne Park without the programme, it concludes that the reduction in the area's youth crime is a result of prevention rather than diversion, even if it isn't possible to directly attribute all of this to Kickz. They propose that if Kickz was simply a diversion then youth crime would be higher on the nights when no sessions are held, however youth crime was the same on any night of the week after the introduction of Kickz (New Philanthropy Capital, 2011). It therefore appears that the integrated approach of Kickz improves the behaviour of young people across the board, suggesting that the benefits may be likely to be long term.

PHYSICAL ACTIVITY AS 'A HOOK'

The success of the integrated approaches seen in the 2nd Chance and Kickz programmes could lead to the conclusion that physical activity itself is not integral to reducing crime and antisocial behaviour, although we have seen with Midnight Basketball that there are benefits even when additional elements are not delivered. What it actually highlights is that certain conditions and the inclusion of key stakeholders enhance the positive outcome of physical activity interventions, and that due to its appealing and engaging nature physical activity is the hook for other sessions and workshops that result in positive behavioural change (Sherry, 2010; Perkins and Noam, 2007; Martinek, 2005). In this sense physical activity can be a mechanism for personal and social development. Physical activity works as a hook because it appeals enough for people to give it a go in the first instance, and it is sufficiently engaging for people to continue participating. The additional advantage to physical activity over another activity in this scenario is the moral element contained within physical sporting activities: this includes fair play, teamwork, safety, leadership and determination. Such skills then help participants to feel grounded in community life. Organised sporting programmes for at risk youths therefore need to be structured so that they encourage young people to feel competent, empowered and connected (Gatz et al., 2002 and King et al., 1998, cited in Carmichael, 2008). To achieve this it helps for programmes to utilise activities where there is a skills base, team focus and plenty to learn (Diana 2000, cited in Carmichael, 2008). Where programmes emphasise winning at all costs and unequal access to participation they are more likely to encourage problems amongst young people at risk (Hawkins, 1998, cited in Carmichael, 2008).

Angling, for example, easily lends itself to celebrating successes and mitigating failures, which works well for vulnerable young people

with low self-esteem and for those who do not want to participate in mainstream sports subject to peer competition. For example, whilst it is possible for a novice angler to catch a fish, the "failure" of not catching a fish can be mitigated through reference to environmental variables as opposed to a personal lack of skill. Angling-related Youth Intervention Programmes (AYIPs) utilise the characteristics of angling to provide a diversion from crime and antisocial behaviour, develop personal and social skills and increase education and employment attainment. Another advantage to angling in particular is that it is highly flexible for acting as a hook to other methods of self-improvement. The diversity of angling activities and locations makes it easy to participate in situations that can aid personal and social development and relationship building through teamwork and one-to-one development. Young people can also be presented with new challenges and a new environment for learning in. Angling also takes part in community spaces and more specifically adult spaces. Because of the proximity of water responsible behaviour is needed and whilst young people are angling they have a meaningful engagement with the community, which may be conducive to reducing antisocial behaviour (Substance, 2012).

The FairPlay programme run by the Rugby Football Union (RFU) in conjunction with Barclays Spaces for Sport and Wooden Spoon (a children's charity for rugby) used rugby as a hook and includes an analysis of the costs involved. The two year programme targeted hard to reach young people through rugby in order to work on their behaviour and social skills. It ran 99 eight week sessions with a total of 1,058 young people, of which 69% (729) attended a minimum of 75% of the sessions. Participants were aged between 14 and 18, had been excluded from mainstream education and were attending Pupil Referral Units. These units are local authority-run schools for children who are unable to attend mainstream schools or have been excluded from them; as a result the teacher to student ratio is higher.

It has been estimated that the cost of sending one pupil to a Pupil Referral Unit is between £13,000 and £18,000 per year compared to around £5,200 per year to send one pupil to a regular secondary school (Corporate Citizenship, 2012). The cost per pupil for the FairPlay programme was £311, which went up to £451 when looking only at those who completed the programme – a fraction of the cost of Pupil Referral Units. Significant increases were seen in a number of skill areas, with 60% of participants reporting quite a bit or a lot more knowledge of anger management after the programme compared to 31% beforehand. Knowledge of problem solving similarly increased from 38% to 64%, whilst asking questions increased from 41% to 66% and getting on with people from 46% to 71%. Interestingly, the areas where the least significant improvements were seen were those furthest removed from the rugby field such as presentation skills and interview skills. This highlights the difficulty in using a physical activity to act as the hook for further training, as partly seen with the Midnight Basketball sessions explored by Hartman and Wheelock (2002), and also illustrates that benefits can be experienced from participating in the activity itself: for example, half of the pupils reported feeling better about themselves (49%) and feeling more confident (47%) as a result of participating.

Staff at the Pupil Referral Units also assessed the performance and behaviour of those who participated in the programme. Whilst positive changes were recorded, levels of sustained progress were perceived as being quite low. Given that the intervention lasted only eight weeks this is not surprising, but any improvements, short term or otherwise, were seen to be extremely positive given the nature of the pupils involved. However, one of the advantages to this programme was that as a result of being run partly by the RFU, the participants were introduced to local rugby clubs in order to continue engaging with the sport and reaping the benefits of participation.

Where national governing bodies are able to help deliver programmes and facilitate this it is easier to establish a long term impact. Follow up research indicated that 180 participants (17%) went to a rugby club at least once after participating in the programme and at least 79 were still playing three months later, although it is suspected that more remained involved. It would be interesting to follow this up in more detail and find out what factors influence take up and drop out in the short, medium and long term.

Positive Futures is a Home Office funded national initiative aimed at ten to 19 year olds and run by the young people's charity Catch 22. Launched in 2001 between Sport England, the Youth Justice Board and the United Kingdom Anti-Drugs Coordination Unit, Positive Futures identified itself not as a sports development project but as a relationship strategy. The strategy was that sport acted as the hook for establishing relationships with socially marginalised young people who are typically alienated from figures of authority. The scheme is currently set to run until March 2013 and now includes activities in visual arts, music and film, education and dance as well as sports. In accordance with the approach of Midnight Basketball, Positive Futures ensures that in areas identified as high crime and high levels of antisocial behaviour activities occur on a Friday and Saturday night. Unfortunately the available evaluations of Positive Future projects make it difficult to distinguish between the impact of physical activity and other programmes, and focus more on case study reports and attendance numbers rather than the differences made to society and the life chances for the young participants.

However, the Positive Futures initiative does highlight the beneficial function that positive authority figures or role models can have. Often young people at risk of offending lack positive relationships with pro-social members of the community.

Physical activity programmes provide a way of creating a natural opportunity for young people to engage with positive role models outside of their usual circles of acquaintance, such as coaches, volunteers or even assigned mentors. This is important because role models can influence socialisation. Rhodes (2002) proposes that mentoring helps young people by enhancing their social-emotional development, providing a role model and improving cognitive development through dialogue and listening. These processes combined can lead to improvements in academic performance, risk behaviour and psychosocial development (cited in Stevens, Kessler and Gladstone, 2006).

However, the benefits of mentoring are likely to only be as good as the mentor and the quality of the relationship. Rowley (1999) focuses on mentors who support new teachers to detail the qualities necessary for a good mentor. These qualities are applicable to all mentors and state that a good mentor is one who is committed, is empathetic, is a continuous learner, is skilled at supporting and instructing, is effective in different interpersonal contexts and is able to communicate belief in the person they are mentoring. Not everyone who wants to be a mentor will naturally possess all of these qualities, which is why training mentors is a useful and important way of maximising their potential to have a positive impact. In addition, a close and enduring connection is needed between the mentor and young person in order to encourage positive developmental change (Rhodes and DuBois, 2008). Physical activity programmes create an environment through which connections can be easily established and built upon. Often it will be coaches or volunteers who outline the values or rules of the activity being participated in. This sets the mentor figure as someone who is there to help and inform for the benefit of the young person, and as someone who can demonstrate achievement and thus be inspiring. This will increase the likelihood of the young person listening to the volunteer or coach on other topics and about other advice.

Furthermore, coaches or volunteers who have progressed to this role after joining the programme as a participant make it easy for new participants to recognise that they can emulate the coach or volunteer who is in a similar position to themselves but with more experience. This also allows coaches and volunteers to have greater empathy with the young people, which will help in building positive and effective relationships (for an understanding of factors influencing identification of a role model and their ability to influence see Bandura's theory of social learning, 1986).

A good sports coach is able to help mental development as well as physical development; this applies in any setting but is even more meaningful when young offenders or at risk youth are involved. A coach can encourage self-motivation through helping the player to set goals that they want to achieve, supporting them in this process and helping to break down any barriers to achieving the target. They can encourage problem solving and decision making and open up pathways of communication (Bell, 1997). For young offenders this self-belief and the skills learnt can be carried over into other areas of their lives. Coaches can also demonstrate belief in the player and their abilities, and for young people at risk of offending it can be extremely valuable for them to have an independent adult place belief in their abilities.

With regards to the building of relationships, physical activity programmes are seen to be beneficial in the community for breaking down barriers between young people and those in positions of authority, such as Police Constable Support Officers, and also for tackling the hierarchies of power and complex relationships that may be established in prisons where it can be hard to demonstrate leadership without violence. Quantitative evidence for these impacts is difficult to find but case studies and qualitative comments from programme participants indicate that this does occur.

For example, a 2009 Cumbria Police Tag Rugby Programme concluded that, *“The programme has been essential in breaking down barriers of both pupils and community groups by using ‘fun’ as the vehicle which has driven the success of the scheme”* (RFU, 2009, p.2).

In addition, The Centre for Social Justice (2011) has argued that often when programmes are delivered by professional sports clubs it is the name and prestige associated with the club and its branding that lures participants in and makes them more willing to listen. Given that the 2nd Chance programme in Portland Young Offender Institution was supported by Chelsea FC and the Kickz programme in Elthorne Park was delivered by Arsenal FC, it is possible that club prestige played a part in the success of these projects, although this is yet to be confirmed by research. Similarly, a scheme run by the Metropolitan Police but held at Tottenham Hotspur’s ground is thought to reinforce positive messages to 1,800 year six pupils a year through the stadium’s local and national profile (Audit Commission, 2009).

In North Devon, a consultation concluded that water and outdoor adventure activities were in young people’s top three most desirable activities to do. This also applied to young people who were not at that time engaged with any out-of-school sports, with 60% of this group stating that water sports was the activity they most wanted to do (McCaie, 2009). It may therefore be that adventurous activities in particular can act as a “hook” for other sessions around improved behaviour; they often fit the model of a skills base, team focus and plenty to learn outlined above. The mental and physical challenges found in adventurous activities differ to those in team sports or training programmes. Often there is a more immediate sense of achievement (for example, from climbing up a wall as opposed to improving in fitness over 12 weeks of playing matches), teamwork may be needed for problem solving, there are usually many elements so that

everyone finds something enjoyable and activities tend to take place outdoors in an entirely new environment. There is, however, a danger that if structured incorrectly, taking a group of young people at risk of offending who have previously offended and isolating them in a new environment exacerbates their behaviour through creating a normalising environment with offenders. It is possible that this risk can be reduced by running programmes targeted at those not at risk as well as those at risk. This creates positive peer influence for young people at risk (Morris, Sallybanks and Willis, 2003).

ADVENTUROUS AND ADRENALINE ACTIVITIES

Lubans et al. (2011) conducted a systematic review of outdoor adventure programs, sport and skill-based programmes and general physical activity and fitness programmes and their impact on the social and emotional wellbeing of at risk young people. The phrase “at risk youth” refers to adolescents who are living in a negative environment and lack the skills and values that are needed to become responsible members of society; young people in this group are likely to suffer depression, low self-esteem and disaffection which may lead to social isolation. 15 studies were included in the review: seven covered outdoor adventure programmes, six covered sport and skill-based programmes and the remaining two focused on general physical fitness programmes.

The outdoor adventure programmes considered had samples of between 12 and 177 adolescent offenders or at risk adolescents and controls (with the exception of one study). They lasted from between four hours to three months and included a range of activities such as rock climbing, horse riding, orienteering and sailing. Two programmes had an additional therapy element in the form of family training to support positive relationships.

Between five studies there was evidence that outdoor adventure programmes resulted in significant improvements in self-worth, self-concept, resilience, perceptions of alienation and self-control, but the methodology was not always rigorous. Two studies found no improvements in social and emotional wellbeing; one of these involved 17 at risk adolescents undertaking a one hour horse riding session once a week for eight weeks. The other provided a three month programme to 45 adolescent offenders and the outdoor adventure programme made up only three days of this programme overall. It is possible that the frequency of the interventions was insufficient in these two studies to have an effect, however a four hour adventure programme with 106 at risk adolescent boys was seen to positively influence resilience. With different outcomes measured, different samples (at risk and offenders) and different study structures, comparisons and conclusions are difficult, but a general trend of a positive impact appears to be evidenced. This was also found by West and Crompton (2001) in their review of the impact of adventure activity programmes and at risk youth. 14 studies explored reductions in undesirable behaviour following the outdoor adventure intervention. Eight of these showed a reduction, and 14 out of 16 studies showed a significant positive change in self-concept, although again the authors highlight that many of the study designs make the validity and generalisability of the findings questionable. It is not clear from either review how adventurous activity programmes contribute to improved behaviour or what the long term affects are.

Recognising the need for quantitative measures of the impact of adventure activity programs aimed at improving wellbeing and life chances for young people, New Philanthropy Capital have recently developed a wellbeing measure. The measure aims to provide a means of recording traditionally difficult to quantify soft skills in order to provide an evidence base for the difference a project is, or isn't, making. The measure consists of a number of statements that young people (aged 11 to 16) have to say how strongly they agree or disagree with. Statements include for example, *"I feel my life has a sense of purpose"*, *"other people think I am a good person"* and *"I wish I lived somewhere else"*. The questions are asked before the activity or programme is embarked on, and again a couple of weeks after completion. Analysis is done at a group level by creating a score for each of the eight areas of wellbeing which will fall between zero and 100, and the before and after scores can then be compared. The areas of wellbeing covered are self-esteem, emotional wellbeing, resilience, satisfaction with friends, satisfaction with family, satisfaction with community, satisfaction with school and life satisfaction.

OUTDOOR ADVENTURE PROGRAMMES RESULTED IN SIGNIFICANT IMPROVEMENTS IN SELF-WORTH, SELF-CONCEPT, RESILIENCE, PERCEPTIONS OF ALIENATION AND SELF-CONTROL

The group only level of analysis available with this tool makes it problematic for use with projects that don't have many participants and may confound results if the sample includes a mixture of young people at risk of antisocial behaviour and not at risk and comparative analysis isn't undertaken. However, the overall approach of attempting to quantify wellbeing could be a useful step forward for this sector. Whilst usage of the tool is not widespread, the Outward Bound Trust used it with a sample of 691 young people undertaking a five day Adventure and Challenge course. They saw a 14% increase in life satisfaction, a 9% increase in self-esteem and a 7% increase in resilience after completing the course (The Outward Bound Trust, 2011).

Other physical activities that share characteristics of outdoor adventure activities can be offered in more immediate settings for young people. Skateboarding has been tagged as an "adrenaline sport" and is also a sport that typically fosters young people to group together which can lead to a gang environment. It involves being outdoors, mastering new skills and risk-taking. The opening of an Active England funded skate park in Skegness in 2006 saw a year one reduction in crime rates of 17%. The park is aimed at 10-18 year olds and in 2007 had 670 annual members and 6000 monthly members (Sport England, 2008).

It has also been hypothesised that adventure activities work with young offenders because they provide them with a sense of excitement and challenge that they had previously turned to crime and antisocial behaviour for. The established psychologist Theodore Millon, renowned for his work on personality disorders, proposed that there are five types of antisocial personality disorder: covetous, reputation-defending, risk-taking, nomadic and malevolent (Millon et al., 2002). For those whose antisocial behaviour is motivated by negative risk-taking, adventure activities may offer a suitable alternative for this thrill through positive risk-taking. Cronin (1991) assessed sensation seeking in 20 mountain climbers with an average of four years' experience and 21 control volunteers. Mountain climbers had higher thrill and adventure seeking scores (0.86) and sensation seeking scale scores (0.58) compared to the control group, leaving Cronin to conclude that participating in mountain climbing was a means through which the desire to take risks could be enacted positively.

PHYSICAL ACTIVITY AS A MEANS OF ADDRESSING RISK FACTORS FOR CRIME AND ANTISOCIAL BEHAVIOUR

The risk factors for becoming a young offender have been highly profiled and documented. It is logical that tackling the risk factors can contribute to a reduction in crime and antisocial behaviour, and there is a role for physical activity to play in this process. For example, in the chapter on physical activity and mental health it is evidenced that physical activity can contribute to increasing self-esteem in adolescents, whilst low self-esteem is associated with aggression, antisocial behaviour and delinquency (Donnellan et al., 2005). Furthermore, low educational attainment can be a risk factor, but physical activity can have a positive impact on capacity to learn – this is covered in the education and employment chapter.

Hansen and Breivek (2001) found that adolescents who weren't challenged and who had a poor social background were more likely to engage in negative risk-taking behaviour. This raises an interesting point around the likelihood of participating in leisure time physical activity for those most at risk of committing antisocial behaviour and crime. The factors that place a young person into the at risk category, such as low self-esteem or poor social and emotional skills, do not lend themselves to voluntarily participating in a sporting activity. Whilst the focus of research tends to be on physical activity as a targeted means of improving behaviour amongst at risk groups, or on improving the behaviour of offenders, participation in sport and recreation in the general population of young people may help to foster traits that contribute to keeping them out of the at risk category.

Mutz and Baur (2009) found that membership of a sports club was not associated with the occurrence of violent behaviour as a form of antisocial behaviour, but that sex, education, social background, immigrant background, family violence, media violence and peer-group attitudes had significant effects. Their analysis was conducted on a sample of 33,000 15 year olds with data gathered from the German sub-sample in the Programme for International Student Assessment. However, participating in physical activity at a sports club is different from having high levels of participation in physical activities. It may be that the sense of community associated with involvement in a sports club plays a role, or that the difference is between individualised activities and team sports, which are more likely to involve a sports club. Unfortunately the researchers were not able to distinguish between different sports. It would also have been interesting to see what impact sports club membership had after controlling for the other factors seen to have stronger influences.



Research from Moesch, Birrer and Seiler (2010), on the other hand, provides evidence that there is some sort of relationship between violence and sports participation in adolescents. Moesch, Birrer and Seiler examined data on sport engagement, violent behaviour and cognition, self-concepts, wellbeing and stress perceptions gathered through self-report questionnaires from 832 adolescents (aged 12-18 years old). Individuals were categorised into one of five levels of violence: non-violent adolescents, adolescents at risk, violence supporters, psychological harassers and violent adolescents. The fourth cluster of psychological harassers were seen to be mostly male and with an immigrant background, aligning with the findings of Mutz and Baur (2009). In addition, Moesch, Birrer and Seiler found that psychological harassers spent the most time participating in sport and there were high levels of prevalence amongst those who played elite sport. Those who were classed as violent adolescents were more likely to take part in team sports that involved body contact, and non-violent adolescents were less likely to do so. However it's difficult to establish causality from these findings. For example, do individuals with more violent tendencies choose to play contact sports or does contact sport encourage violence in individuals?

Caruso (2011) used a panel dataset (size unknown) from the Italian national statistical office for the twenty Italian regions between 1997 and 2003 to empirically study the relationship between sports

participation and three types of crime: property crime, violent crime and juvenile crime (all crime by individuals aged 18 or younger). A 1% increase in sport participation was found to reduce juvenile crime by approximately 0.8% and property crime by approximately 0.3%, leading Caruso to conclude that there was a robust negative association between participating in sports and juvenile crime, and for sports participation and property crime. A positive association was seen between sports participation and violent crime, which accords with the findings of Moesch, Birrer and Seiler (2010), but the significance of this finding was weak and Caruso hypothesises that football hooliganism has skewed this.

Low educational attainment, poor social skills and low self-esteem are all risk factors for antisocial behaviour. An American after school football programme for at risk young people was evaluated by Hritz et al. (2010) for its impact on self-esteem, social skills and academic success. 31 eight to ten year old students who were identified by teachers as being at risk participated in the after school football programme once or twice a week for several months. The football sessions were designed to be delivered in a way that provided a clear structure with enforced rules and expectations, caring and supportive relationships, opportunities for meaningful group inclusion, positive social norms, self-empowerment and expression, skill building and integration with family, school and the community.

Prior to each session students' schoolwork would be reviewed and if anything was outstanding it had to be completed before they could begin to play or practice. Complete data was collected for 25 students and included teacher ratings of prosocial and social competence skills, teacher ratings of cognitive function of classroom behaviours, student perceptions of self-esteem and reading and maths scores.

15 of 19 statements on the student's prosocial skills showed a significant difference following the after school football programme. The greatest improvements were seen in children being able to accept not getting their own way, producing work of acceptable quality, responding to teasing or name calling constructively and using their free time appropriately. The scale to answer these questions ranged from one, which indicated never, to five, which indicated frequently. The before and after programme mean scores for being able to accept not getting their own way were 3.36 and 4.33 respectively, for producing work of acceptable quality they were 3.40 and 4.33 respectively, for constructive responses to teasing the mean scores were 2.84 and 3.71 respectively, and for using free time appropriately they were 3.48 and 4.29 respectively. Classroom behaviour was also seen to improve, reflected in higher scores for maths and reading aptitude, which may help to further increase self-esteem. The group mean reading score increased from 240.84 to 250.19 after the programme, whilst the mean maths score increased from 245.60 to 256.29. The after school programme was overall a success and is particularly interesting given that the audience was in a sense captive. The additional requirement of completing all school work before being able to participate was a clever and constructive way to not only improve educational progress but also to motivate the young people at risk and to give them a sense of reward and achievement for their hard work. Links between sports clubs and schools to form after school programmes or training sessions could utilise similar mechanisms to address multiple risk factors and furthermore

would work well at integrating young people with their community.

A lack of self-regulation has been linked to substance abuse and criminal behaviour amongst other negative behaviours (Baumeister et al., 1994, cited in Oaten and Cheng, 2006) and potentially it can play a role in someone's adherence to an exercise programme or participation in a sport. Oaten and Cheng (2006) therefore tested the role of regular physical exercise in increasing self-regulation or regulatory strength. The ability to self-regulate is believed to be a result of sufficient self-regulation resource and motivation; it is thought that it's possible to increase the resource through exercises in self-regulation. 24 sedentary Australian undergraduate students aged 18-50 years volunteered for the research and were divided into three groups. One group went straight into a two month exercise programme of aerobic classes, free-weights and resistance training three to four times a week in a combination tailored to individual needs by gym staff. The other two groups acted as controls by being placed on a waiting list for two months before beginning the same exercise programme for two months. All participants self-reported on regulatory behaviours every four weeks, emotional distress, perceived stress, self-efficacy, cigarette smoking, alcohol and caffeine consumption and other everyday regulatory behaviours were measured by questionnaire. In addition, participants' self-regulation abilities were tested by the researchers using a visual tracking task before and after a thought suppression task.

Participants appeared better at controlling their behaviour following the exercise programme, showing an increase in healthy eating and a decrease in junk food consumption, impulse spending, overspending and loss of temper. At enrolment, participants reported healthy eating two to three times a week; after two months of exercising healthy eating was occurring daily, and sometimes more than once a day.

WHILST JUNK FOOD WAS CONSUMED DAILY AT THE BEGINNING OF THE RESEARCH, FOLLOWING TWO MONTHS OF EXERCISING, JUNK FOOD CONSUMPTION FELL TO ONE TO THREE TIMES A WEEK



Whilst junk food was consumed daily at the beginning of the research, following two months of exercising, junk food consumption fell to one to three times a week. Participants reported impulse spending had fallen from a daily occurrence to once a week, whilst overspending and loss of temper used to happen several times a week and fell to less than once a week. Seeing friends instead of studying, missing appointments and putting things off until later changed from occurring daily to less than once a week. Reports of watching television instead of studying and leaving dishes in the sink also declined.

Some of these areas of self-regulation are related to adhering to an exercise programme, for example, committing yourself to regular exercises is likely to increase consumption of healthy food over junk food, regulate alcohol intake more and create better mood, making people less likely to lose their tempers. However, the majority of these areas are not related and still show an increase in self-regulation. The tasks tested by the researchers show that participants improved their regulatory stamina with time spent exercising. This was evidenced by a reduction in the impact of the thought suppression task (regulatory depletion) on ability to perform in the visual tracking test (self-regulation test). Throughout the research, the initial error rate for the visual tracking test was around 11%. At enrolment the thought suppression task resulted in a 24% error rate for the visual tracking test. After one month of exercising this

fell to 17%, and after two months it was 14%. Whilst participants were on control waiting lists, no changes were evidenced at all, suggesting that these improvements were not a result of multiple testing. It is worth noting that perceived stress and emotional distress were reported as being reduced but no changes in self-efficacy were recorded. Oaten and Cheng therefore conclude that the improvements in self-regulation seen from participating regularly in physical activity were a result of a reduced vulnerability to regulatory depletion and its effects.

The findings of Oaten and Cheng and their implications for behaviour modification are very interesting, but much more research is needed to understand the relationship properly. This research is also limited by its small sample size: 24 participants took part in total but only those who recorded doing each area of self-regulation at all at the beginning of the research were considered in analysis. Base sizes aren't given for the areas of self-regulation but many of them would have had fewer than the full 24 participants included – it's highly likely that some participants would never have left dishes in the sink, smoked cigarettes or missed appointments for example. Nevertheless Oaten and Cheng's findings suggest that physical activity interventions may be able to improve long term behaviours of those at risk of offending or who have been previously convicted by enhancing their ability to self-regulate.

It is likely to be more successful for those who truly want to change their behaviour as an element of self-regulation will need to be present initially. Further research is needed to understand the full implications, but it is possible that where young people are keen to change but has returned to an environment that tests their willpower, enhanced self-regulation through physical activity could help them to control negative behaviours.

CONCLUSION

The exact relationship between physical activity and crime reduction is not clear. Anecdotal evidence supports generally positive effects whilst a small number of studies (such as the 2nd Chance programme or Kickz) have been able to prove the short term value of their work. Little longitudinal evidence for programmes exists, making it difficult to understand the real impact that physical activity interventions have on chances of offending or re-offending. This is something that should be examined, given the significant way in which committing crime or acts of antisocial behaviour influences a young person's life chances. There are several theories as to how physical activity can be beneficial in tackling antisocial behaviour and crime: as a diversionary activity, through providing a hook for teaching emotional and career skills or through behaviour modification and building self-esteem, but no consensus exists as yet. However, it has been established that whilst delivering physical activity programmes for at risk young people and offenders, it is important that the activity appeals to the participants, the programme is developed by relevant experts to be targeted at the people involved and their specific situations, and that coaches, mentors and others involved in the running of the programme need to be well trained. Little research focuses on the influence of physical activity programmes for adult offenders or for the protective role that membership of a sports club may have in increasing community involvement and so reducing the chance of committing a crime or behaving antisocially.