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The relationship between physical activity and mental health: a summary of evidence and policy

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This paper summarises the evidence available for the positive effects of physical activity on mental ill-health. It also summarises references to this link in current strategy and policy documents, both in Northern Ireland and in Scotland.

Key Points

- The Chief Medical Officers' joint report for the UK states that 'physical activity has an important role to play in promoting mental health and well-being by preventing mental health problems'. This paper explores some of the evidence which has contributed to this assertion.
- There is a key difference in the types of evidence available. Firstly, evidence from controlled trials suggests that conclusions are complex, but that for most mental health conditions physical activity has a positive impact in reducing specific symptoms, though not necessarily in reducing all symptoms in every case.
- Studies of the relationship between suicide risk and engagement in sport have concluded that an active engagement in sport has a significant association with lower levels of hopelessness.
- Secondly, the anecdotal evidence is somewhat clearer in suggesting that physical activity can make a positive contribution to the recovery – and the lives – of those suffering from mental ill-health. Effectiveness is particularly marked in cases of depression.
- Both forms of evidence produce the unequivocal conclusion that physical *inactivity* has a negative impact on mental health. It has also been established that those who are suffering from mental ill-health on the whole have a poorer physical condition than the population as a whole.
- It may be significant that the nature of the benefits deriving from physical activity are not clearly understood, and that the nature and type of physical activity best suited to the prevention or treatment of a mental health condition is likely to be person-specific.
- In 2007/08, the Committee for Health, Social Services and Public Safety recommended that the DHSSPS Minister 'explore how the prescribing of an exercise regime can be developed and promoted for use as an option by GPs'. It also recommended that Sport NI and other sporting organisations should be involved in delivering the suicide prevention strategy.
- Although the previous mental health action plan for Northern Ireland does recognise the benefits of physical activity as an intervention tool for those suffering from mental ill-health, there would seem to be no explicit reference to such benefits either in the current Programme for Government or in the *Northern Ireland Suicide Prevention Strategy*.

Executive Summary

The Chief Medical Officers' joint report for the UK states that 'physical activity has an important role to play in promoting mental health and well-being by preventing mental health problems'.

This paper explores some of the evidence which has contributed to this assertion, in terms of both preventing, as well as treating, mental health problems. The evidence summarised here takes two distinctly different forms: evidence from controlled trials, and qualitative evidence and personal accounts.

Firstly, evidence from controlled trials suggests that conclusions are complex, in part due to the relatively low levels of research for its relationship with some mental health conditions. For various mental health conditions physical activity can be seen to sometimes have a positive impact in reducing specific symptoms, though not necessarily in reducing all symptoms in every case. The precise nature of these benefits, and the processes involved, are not clearly understood.

Studies of the relationship between suicide risk and engagement in sport have concluded that an active engagement in sport has a significant association with lower levels of hopelessness.

Secondly, qualitative evidence is presented through personal testimony derived from specific case studies. These would seem to suggest that physical activity, and indeed sport, can make a positive contribution to the recovery – and the lives – of those suffering from mental ill-health. Conditions displaying symptoms of depression would appear to be particularly affected by physical activity.

Both forms of evidence produce the unequivocal conclusion that physical *inactivity* has a negative impact on mental health, for both adults and children. It has also been established that those who are suffering from mental ill-health on the whole have a poorer physical condition than the population as a whole.

Some sufferers of mental ill-health have noted that the *nature* of the provision and its context within the situation of the person involved are significant factors. Particular sporting bodies have established programmes aimed at using their sports to confront, alleviate and prevent mental ill-health, within a controlled setting and using coaches familiar with mental health issues.

The paper then summarises the conclusions of the Committee for Health, Social Services and Public Safety inquiry into suicide prevention in 2007/08. It recommended that the DHSSPS Minister 'explore how the prescribing of an exercise regime can be developed and promoted for use as an option by GPs', and that both the DHSSPS Minister and the DCAL Minister should explore how Sport NI and other sporting organisations 'can fully participate in delivering the suicide strategy'.

The *Bamford Review of Mental Health and Learning Disability* recommended in 2006 that 'social prescribing, including exercise, learning and arts of prescription, as an adjunct or alternative to medication have been proved to be effective elsewhere in the UK and internationally. There is a need for this approach to be further employed in Northern Ireland'.

The mental health action plan for Northern Ireland which followed this review does recognise the benefits of physical activity as an intervention tool for those suffering from mental ill-health. However, there would seem to be no explicit reference to such benefits either in the current Programme for Government or in the *Northern Ireland Suicide Prevention Strategy*.

The current *Northern Ireland Suicide Prevention Strategy* does not make reference to sport or physical activity as a potentially beneficial factor in tackling suicide rates.

In Scotland, the Scottish Government published in 2008 a guidance paper aimed specifically at improving the physical health and well-being of those experiencing mental illness. The current mental health policy document for Scotland follows the evidence cited in this guidance paper in recognising the causal and symptomatic link between physical and mental health. A specific commitment is provided in the policy for improving the physical condition of those with mental health problems.

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1 Summary of the relationship between physical activity and mental health

The Chief Medical Officers' joint report for the UK states the following regarding the relationship between physical activity and mental health:

Physical activity has an important role to play in promoting mental health and well-being by preventing mental health problems and improving the quality of life of those experiencing mental health problems and illnesses.

For example, evidence shows that physical activity can reduce the risk of depression, dementia and Alzheimer's. It also shows that physical activity can enhance psychological well-being, by improving self-perception and self-esteem, mood and sleep quality, and by reducing levels of anxiety and fatigue¹.

A correlation between improved mental health and physical activity has been widely recognised by academic studies. A wide range of conditions have been shown to be alleviated by physical activity, including mild depression, severe or clinical depression, some aspects of schizophrenia, dementia, some substance addictions, and autistic spectrum disorders.

Studies of the relationship between suicide risk and engagement in sport have concluded that an active engagement in sport has a significant association with lower levels of hopelessness.

However, the nature of the evidence for a positive correlation between physical activity and improved mental health is variable, with research in some areas less well developed than others. Indeed, the precise nature of these benefits are not clearly understood, and nor are the mechanisms by which physical activity enhances mental health.

It has also been established that there are strong links between poor physical health and poor mental health, so that not only can physical activity help to alleviate some of the symptoms of mental illness, but also the mentally ill are more likely to be in poor physical condition and therefore more likely to require a programme of physical activity.

The benefits of sport and physical activity in contributing to psychological wellbeing were recognised in a report for the Department for Culture, Media and Sport in 2007².

¹ Department of Health. 2011. Start Active, Stay Active. 2011. A Report on Physical Activity for Health from the Four Home Countries' Chief Medical Officers: p13 <http://nia1.me/sh>

² Oughton, C & Tacon, R. 2007. *Sport's Contribution to Achieving Wider Social Benefits: A report for the Department for Culture Media and Sport*. <http://www.parliament.uk/deposits/depositedpapers/2008/DEP2008-0406.doc>

2 Definitions

2.1 Mental health

The World Health Organisation describes mental health in a positive sense, as follows:

Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community³.

Mental health is described as more than the absence of mental disorders or disabilities, and a number of different social, psychological, and biological factors can pose risks to mental health. The Public Health Agency uses the term 'mental ill-health' to describe a range of mental health problems, from those with mild symptoms to the most severe mental disorders⁴. Mental ill-health can be characterised by mental health problems, where there are 'symptoms...that are not severe enough to warrant a diagnosis of a mental disorder, but can disrupt the way in which people think, feel and behave'. A 'mental health disorder' can be described as 'an illness that is diagnosed and causes major changes in a person's thinking, emotional state and behaviour, and disrupts the person's ability to work and maintain personal relationships'.

Such disorders include a wide range of conditions, including mild depression, bi-polar disorder, schizophrenia, postnatal depression, psychosis, dementia, anxiety disorders. In addition to conditions of a primarily cognitive nature, a decline in mental health may also be associated with physical conditions such as cancer, HIV and AIDS, or congestive heart failure.

Depression and anxiety may arise from physical ill-health, and exercise may act as a distraction from the symptoms, or treatment, of such conditions. Research has shown, for example, that for HIV and AIDS while the effects of exercise on psychological well-being are not certain, there are clear improvements in aerobic fitness which may in turn enhance overall quality of life and self-esteem⁵.

2.2 Sport and physical activity

Sport is defined here in a broad fashion as,

...all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels⁶.

³ World Health Organisation. Fact sheet N°220, September 2010: <http://www.who.int/mediacentre/factsheets/fs220/en/>

⁴ Public Health Agency. 'What is mental ill health?' <http://www.mindingyourhead.info/home/what-mental-ill-health>

⁵ *Ibid*: p215.

⁶ Council of Europe, European Sports Charter, 2001; This definition is also cited in: Sport Northern Ireland. (no date). *Making Life Better: A Case for Sport and Physical Recreation*: p3

In general, the term ‘physical activity’ is used here to refer to ‘any movement of the body that results in energy expenditure above that of resting level’⁷. Exercise is referred to as a subset of physical activity, where ‘the activity is purposefully undertaken with the aim of maintaining or improving physical fitness or health’⁸.

3 Physical activity and mental health in adults

In general terms, there is some evidence to suggest that physical activity can alleviate the symptoms of mental health disorders and contribute to mental well-being.

Studies of the relationship between suicide risk and engagement in sport have concluded that there is increasing evidence that an active engagement in sport has a significant association with lower levels of hopelessness⁹.

Conversely, it has been concluded that ‘being physically inactive is unlikely to be beneficial for a number of reasons’¹⁰.

However, the nature of the evidence for a positive correlation between physical activity and improved mental health is variable, with research in some areas less well developed than others.

To some extent, it would seem that clinical studies, through randomized controlled trials, are catching up with emerging evidence provided by personal accounts, questionnaires and interviews that physical activity can help to provide both a focus and a distraction for sufferers of mental health conditions.

3.1 Evidence from randomized controlled trials

Although research has also been conducted into the potential benefits of physical activity for mental health through controlled trials, some researchers have noted the difficulties in reaching firm conclusions. This is in part due to the many different social, physical and medical variables at work with mental health conditions, and in part due to the relatively low levels of research for its relationship with some conditions. But while thus far randomized controlled trials have either been insufficient or ambiguous in producing firm conclusions, the general indications continue to be that physical activity has a beneficial effect overall on mental health¹¹.

⁷ Caspersen, CJ, Powell, KE & Christenson, GM. 1985. ‘Physical activity, exercise and physical fitness: definitions and distinctions for health-related research’. *Public Health Reports* 100: 126–131.

⁸ *Ibid*: p4.

⁹ Müller, B, Georgi, K, Schnabel, A & Schneider, B. 2010. Does sport have a protective effect against suicide? *Epidemiologia e Psichiatria Sociale* 18: p331; Chioqueta, AP & Stiles, AP. 2007. ‘Cognitive factors, engagement in sport and suicide risk’, *Archives of Suicide Research* 11, 4: p384.

¹⁰ Faulkner, GEJ & Taylor, AH. 2005. ‘From emerging relationships to the future role of exercise in mental health promotion’, in GEJ Faulkner & AH Taylor (eds) *Exercise, Health and Mental Health: Emerging Relationships*. Routledge: p215.

¹¹ Faulkner, GEJ & Taylor, AH. 2005. (eds) *Exercise, Health and Mental Health: Emerging Relationships*. Routledge: this publication provides a summary of the impact of physical activity on eight different mental health conditions; the evidence for each condition is drawn typically from 10–20 different studies.

Variation within the overall picture of positive correlation may in part be dependent on the nature of the mental health condition. The following is a summary of research conclusions regarding the benefits of physical activity for certain distinct groups.

A relatively large amount of research has been conducted looking at the relationship between physical activity and **depression**. This literature has generally concluded that there is an inverse relationship between physical activity and depressive symptoms¹². Within studies which have focused on groups suffering from clinical depression, statistics have shown that physical activity leads to a reduction of symptoms¹³.

With regard to **schizophrenia**, there is some support that participating in physical activity can alleviate negative symptoms associated with the condition, including depression, low self-esteem, and social withdrawal. There is also a high incidence of obesity among schizophrenia sufferers. However, there is less evidence that exercise is effective in dealing with symptoms such as auditory hallucinations¹⁴.

Studies of **dementia** have indicated a slight beneficial influence of physical activity against Alzheimer's disease, and physical activity has been shown to improve functional status in frail nursing home residents. However, no association is evident between physical activity and Vascular dementia¹⁵.

For both adults and children with **autism spectrum disorders (ASD)**¹⁶, a review of the available evidence has produced the tentative conclusion that in terms of both motor performance and social skills, adults and children benefit from exercise interventions. It is noted, however, that individual interventions are of greater benefit than group interventions¹⁷.

Studies have shown that those with **substance addictions** may also experience some benefits from increased physical activity, although the evidence varies depending on the form of addiction. For example, there is clear support that physical exercise has a positive effect on fitness and strength for those undergoing alcohol rehabilitation, although the evidence for drug rehabilitation is less clear. The link between raised self-esteem and exercise with drug and alcohol rehabilitation is equivocal, though there is some limited experimental evidence to suggest that alcohol cravings may be alleviated during exercise. For those giving up smoking, low to moderate intensity exercise can help alleviate withdrawal symptoms¹⁸.

¹² A summary of this is provided by Carless, D & Douglas, K. 2010. *Sport and Physical Activity for Mental Health*. Wiley-Blackwell: p15.

¹³ Stathopoulou, G, Powers, M, Berry A, Smits, J & Otto, M. 2006. 'Exercise interventions for mental health: A quantitative and qualitative review', *Clinical Psychology – Science and Practice* 13(2): pp170–193.

¹⁴ Faulkner & Taylor 2005: p212.

¹⁵ Faulkner & Taylor 2005: p213.

¹⁶ The NHS does not regard autism as either a learning disability or a mental health problem on its own. However, some people with autism may have an accompanying mental health problem or learning difficulty. See: <http://www.nhs.uk/Livewell/Autism/Pages/Autismoverview.aspx>

¹⁷ Sowa, M & Meulenbroek, R. 2012. 'Effects of physical exercise on Autism Spectrum Disorders: A meta-analysis', *Research in Autism Spectrum Disorders* 6 (1): 46-57

¹⁸ Faulkner & Taylor 2005: p213.

There is some evidence that exercise training may bring about significant improvements for those suffering from **disturbed sleep**.

One issue of debate is the fact that the precise cause of the positive effect of physical activity on mental health is not always known¹⁹. A number of potential hypotheses have been formed, which could be summarised as follows²⁰:

- **Psychosocial**: distraction from anxieties, worries and preoccupations.
- **Thermogenic**: increasing body temperature reduces tonic muscle activity, reducing cognitive anxiety.
- **Catecholamine**: high levels of adrenaline, non-adrenaline and dopamine associated with euphoria and positive mood state.
- **Endorphin**: exercise increases plasma endorphins, associated with euphoria and analgesia.

Some literature points to the fact that there are number of areas within the overall relationship between sport and mental health that remain under-researched. For example, it is not clear to what extent the psychological effects of physical activity are the same for different modes of activity (for example, aerobic, strength-based, flexibility-based etc)²¹.

Research has also indicated a number of drawbacks. Athletes are known to be at increased risk of psychiatric illness and also of suicide²², and there is some evidence that eating disorders are more prevalent among professional sports practitioners than the general population.

The pressures of competitive sport can also exacerbate or act as a catalyst for mental health problems, either when the sportsperson is still active or as a result of withdrawal from the game²³.

One recent study has cautioned against using evidence from controlled trials alone in assessing the potential benefits of physical activity in mental health. A distinction is drawn between an assessment on the one hand of those factors which can be *measured*, generally the alleviation or diminution of symptoms associated with mental health problems, and on the other the *meaning* attached to physical activity for the mental ill-health sufferers themselves (ie what physical activity adds to their situation, rather than what it helps to take away)²⁴.

¹⁹ Carless, D & Douglas, K. 2010. *Sport and Physical Activity for Mental Health*. Wiley-Blackwell: p16.

²⁰ Sport NI. Written notes in preparation for a briefing to the Committee for Health, Social Services and Public Safety, inquiry into the prevention of suicide and self-harm, 13.3.08.

²¹ Faulkner & Taylor 2005: p219.

²² Baum, AL. 2005. 'Clinics in sports medicine – suicide in athletes: A review and commentary', *Clinics in Sports Medicine* 24: pp853–869.

²³ Stapleton, S. 30.11.11. 'GAA and mental health'. Eircom SportsHub website: <http://eircomsports.eircom.net/News/GAA-and-mental-health.aspx>

²⁴ Carless, D & Douglas, K. 2010. *Sport and Physical Activity for Mental Health*. Wiley-Blackwell: p16.

3.2 General observations from case study evidence

Two mental health analysts, David Carless and Kitrina Douglas, have recently published accounts of two sufferers of depression, asking them to comment specifically on the role of sport and physical activity in managing their symptoms. A number of points of interest arise from these accounts²⁵.

In terms of the wider benefits of the exercise, Laura summarises her experience of doing badminton and aerobics as follows:

I definitely get a buzz afterwards. I feel like I have achieved something and I feel, well, energised. I definitely feel very good that I can join something 'normal'.

For Colin, the physical activity acted as a trigger to recovery:

I started with some activities like going somewhere in the van for a couple of hours. Chaps would come round and take us out, so that was like a walking group really, just to get out of the hospital. And then I started going to gym and went to OT and then I started going swimming – that was it then. It wasn't so bad then. My confidence came back. I was actually on the road to recovery... 'Cause I was doing exercises I felt a bit better like, felt more, a bit of energy, felt a bit stronger. Rather than feeling low, when I was doing some activity – the exercises – I felt better. I gained something out of it.

However, the account of Laura suggests that the *nature* of the provision of sport – the point in her recovery when it occurs and the situation and context of the sporting activity – is significant.

People think, 'Oh! It's just a badminton session,' but it's not, there's a hell of a lot more to deal with... It's like, putting myself in a position of vulnerability, having to meet lots of new people and things that aren't necessarily predictable. I can't always say who's going to be there, or who's not going to be there... But what playing badminton has done, from a physical activity point of view is, it's been the finger that's pushed the dominoes... So doing the badminton in a mental health setting gave me the confidence to start aerobics at the local sports centre with a friend...

Both interviewees draw attention to the fact that physical inactivity does not contribute to a recovery process, and may actually increase the likelihood of a depressive episode²⁶.

²⁵ Carless, D & Douglas, K. 2010. *Sport and Physical Activity for Mental Health*. Wiley-Blackwell.

²⁶ Carless, D & Douglas, K: pp39 & 43/4.

3.3 Case study 1: Boxing

A project run by former world boxing champion Duke Mackenzie and supported by the mental health charity Mind suggests that benefits can derive from the social nature of exercise within a group. The exercise programme is similar to Boxercise, and incorporates a number of boxing moves and techniques, without physical contact. One participant in the scheme commented of the benefits of the programme from his point of view:

Before I started the Boxercise programme I was suffering from agoraphobia, low self-esteem and depression, I wasn't working or leaving my house other than to attend medical appointments. It had a major impact in helping me regain ownership of my own life...The first three sessions I found it very hard. It was the last place I wanted to be – I felt down, had low self-esteem and low confidence, but by the fourth session I was actually looking forward to it. By the fifth session I had a lot of confidence and had started to eat properly and sleep. I was managing to go out and see people and by the end of it I had got the boxing bug²⁷.

Other participants in the scheme have commented on the fact that both the exercise and the learning of a new sport can provide a distraction from some of the symptoms of mental illness:

I was really looking forward to it, to be honest, something really physical rather than just talking about things. It was the first thing I'd looked forward to for years...Once you start to learn the complexities of boxing, I found it was the only time I could focus completely on something else, with no time for my mind to wander off and think things it shouldn't.²⁸

The project involves weekly non-contact, boxing style training sessions for sufferers of mental health conditions, and is funded by Sport Relief and Croydon Primary Care Trust. Patients were initially assessed for their suitability for the project as there were initial concerns about the effects of a boxing programme on those suffering from a mental health condition. Initial screening was carried out by Dr Deji Ayonrinde of the Bethlem Royal Hospital, who commented of the project that,

There had been some anxiety among health professionals that Boxercise and boxing methods may actually increase aggression and violence among people with mental health problems, which certainly has not been the case whatsoever...What it has done is to improve physical fitness in all participants in some there was quite noticeable weight loss. This is quite

²⁷ Elliott, J. BBC News Website, 'World champ helped my mental health', 25.7.09:
<http://news.bbc.co.uk/1/hi/health/8153429.stm>

²⁸ Quotation from Samantha Richardson, article by Michael Parker, 'Boxing Clever'. 15.3.10.
<http://www.astarix.co.uk/2010/03/duke-mckenzie>

*important to help prevent health risks such as diabetes, heart disease and hypertension.*²⁹

The Amateur Boxing Association (ABA) is offering its own training programme, in association with the charity Mind, providing mental health awareness training for boxing coaches. The training provides information on different conditions and their symptoms, the physical impact of mental health problems, the benefits of exercise for mental health, the relevant legal requirements, and signposting to sources of help and information³⁰.

3.4 Case study 2: Football

The Positive Mental Action League was set up in London in 2002, with 21 football teams across the city aimed specifically at mental health patients. Both male and female players are recruited through local hospitals, community groups and hostels.

Members of one of the teams in the league, Hackney FC, were questioned after 10 months in the team and reported significant improvements in their health. Three quarters reported being able to reduce their medication after taking part in the course, the same proportion said they had a better social and family life and that they had gone on to get jobs or do further courses. One former Hackney FC player, a bi-polar sufferer who is now a coach with the team, commented of the personal benefits for him:

*It helped me make friends and was a catalyst to make me more aware of my self-management, I gave up smoking cannabis and cigarettes and became more focussed in what I was doing. I was able to contribute in the way I wanted. My illness put stress on the family and friends... This has helped me turn my life around and to see that there is light at the end of the tunnel and give me hope. It has also put me in the position to give others hope*³¹.

Another example of the use of football to tackle mental health problems is the 'It's a Goal' programme³². Rather than focusing primarily on the physical activity aspects of football, It's a Goal uses the appeal of football and the facilities of major professional clubs to attract men with mental health problems to attend a course to help them understand and manage their condition.

The programme was initiated by community psychiatric nurse Pete Sayers at Macclesfield Town Football Club, and then expanded – with support from Bobby

²⁹ Elliott, J. BBC News website, 'World champ helped my mental health', 25.7.09: <http://news.bbc.co.uk/1/hi/health/8153429.stm>

³⁰ Amateur Boxing Association of England website. 'Mental Health Awareness - an introductory course for sports coaches': <http://nia1.me/cl> Accessed 23.4.12.

³¹ Elliott, J. BBC News website. 29.9.08. 'Football therapy – for the mentally ill': <http://news.bbc.co.uk/1/hi/health/7534815.stm>

³² Elliott, J. BBC News website. 20.5.06. 'Kicking depression into touch': <http://news.bbc.co.uk/1/hi/health/4951456.stm>

Charlton – to Manchester United Football Club in 2008. Since then, the programme has expanded to a franchise system, and is running at more than 16 football clubs.

The programme is aimed at men aged 16-35 who suffer from depression, poor confidence or low self-esteem. It uses the attraction of football for young men to help recruit them to the programme, and some of the terminology and concepts of football are used to structure the course. For example, participants are called 'players' and each player joins a team that works for 11 sessions (based on the number of players in a team). The sessions are called matches and are divided into stages named after team positions. The first match is called 'goalkeeper', and players sign their contracts, get to know one another and set their first goals. The climax of the course are two 'attack' sessions where players focus on taking opportunities and on behaviour, and evaluate their progress.

One participant, a manic depressive who had been violently bullied and sexually abused in his teens, commented that it had helped him come to terms with his illness, allowing him to focus on his future.

I hoped it might help me through a current bout of depression. But what it did do was to help me accept 100% that I have this illness, which I had always tried to hide, and it focused me on getting on with my life. I had been worried that it might turn out to be a 'group hug' type scenario, like in America, but it wasn't and what it did do was concentrate on what I wanted to achieve.

The It's a Goal programme was the subject of an Early Day Motion in the House of Commons in 2009³³.

4 Physical activity and mental health in young people

A recent study has drawn together the available evidence for the effects of physical activity on mental health in children and adolescents³⁴. While overall a positive correlation is evident in this group, the evidence is mixed and in some areas research so far has been inadequate to be conclusive. The overall assessment produced by this study is that,

In summarising physical activity and mental health in young people, physical activity is likely to have positive psychosocial outcomes... The effects seem strongest for self-esteem (at least in the short-term), and

³³ It's a Goal website. 2009. 'It's a Goal! reaches the House of Commons!': <http://www.itsagoal.org.uk/its-a-goal-reaches-the-house-of-commons.html>

³⁴ Biddle, SJH & Asare, M. 2011. 'Physical activity and mental health in children and adolescents: a review of reviews'. *British Journal of Sports Medicine* 45: pp886–895; this review summarises the results of around 40 previous studies.

those who are physically active seem less likely to suffer from mental health problems and may have enhanced cognitive functioning³⁵.

For adult sufferers of **depression**, there is clear evidence that physical activity reduces symptoms. However, in children and adolescents there is much less evidence. While tests have shown that physical activity seems to be of potential benefit, the evidence base for a clear causal link among young people with depression has so far been more limited³⁶.

The evidence base for a link between physical activity and a reduction in **anxiety** among young people has a similarly limited evidence base, though again it has been shown to have a small beneficial effect³⁷.

Physical activity can lead to improvements in **self-esteem** in young people, at least in the short-term, though it is recognised that self-esteem is a complex issue with a number of factors not necessarily affected by physical activity³⁸.

Cognitive functioning and academic achievement have also been the focus of studies regarding the potentially positive effects of physical activity. It has been concluded that routine physical activity can be associated with improved cognitive performance, classroom behaviour and academic achievement, though these associations so far appear to be small³⁹.

In spite of the relatively under-developed nature of the evidence base in this area, the clearest conclusion produced by previous studies is that higher levels of sedentary behaviour are conclusively associated with worse mental health⁴⁰.

5 Strategies for physical activity and mental health

5.1 Northern Ireland

The Committee for Health, Social Services and Public Safety 2007/08 inquiry into the prevention of suicide and self-harm made two recommendations in relation to sport, as follows⁴¹:

*12. The positive role of sport and exercise in combating stress, anxiety and depression is well established and widely recognised. **We urge the Minister to explore how the prescribing of an exercise regime can be***

³⁵ Biddle & Asare 2011: p894.

³⁶ Biddle & Asare 2011: p888.

³⁷ Biddle & Asare 2011: p889.

³⁸ Biddle & Asare 2011: p889.

³⁹ Biddle & Asare 2011: p894.

⁴⁰ Biddle & Asare 2011: p894.

⁴¹ Committee for Health, Social Services and Public Safety. 2008. *Report on the Inquiry into the Prevention of Suicide and Self Harm*: <http://nia1.me/4q>

developed and promoted for use as an option by GPs in appropriate circumstances.

13. *We are disappointed that Sport NI and the main sports bodies in Northern Ireland have not been directly involved in developing and delivering the strategy to prevent suicide. We call on the Minister for Health, Social Services and Public Safety to explore with the Minister for Culture Arts and Leisure how Sport NI and other sports organisations can fully participate in delivering the suicide strategy. We strongly commend the Scottish model of involving sporting icons and using major sporting occasions to raise awareness of the issue and to encourage young people, particularly young men, to seek help.*

A previous Department of Health, Social Services and Public Safety mental health strategy, appeared to recognise the link between physical activity and mental health, albeit briefly. *Promoting Mental Health* (which ran from 2003 to 2008)⁴² contained a set of actions, of which Action 4 is most relevant here:

DHSSPS will in partnership with Department of Culture, Arts and Leisure (DCAL), Department of Education (DE), Department for Employment and Learning (DEL) and Department of Regional Development (DRD) continue to support and develop initiatives under the Physical Activity and Drug & Alcohol Strategies.

In 2006, the *Bamford Review of Mental Health and Learning Disability* was published. This review sought to examine current policy and identify a number of key issues to be addressed, one of which was the under-use of what it terms 'social prescribing'. This is described in the review as follows:

Social Prescribing, including exercise, learning and arts on prescription, as an adjunct or alternative to medication have been proved to be effective elsewhere in the UK and internationally. There is a need for this approach to be further employed in Northern Ireland⁴³.

DHSSPS published a response to the Bamford Review, in the form of an action plan for 2009 to 2011. This was more explicit in containing specific recommendations on the role of physical activity as an intervention tool. The action plan contained reference to the Sport Matters strategy as a 'key action', and suggested 'a greater emphasis on the mental benefits of regular participation in sport and physical recreation'⁴⁴.

⁴² DHSSPS. 2003. *Promoting Mental Health Strategy and Action Plan 2003–2008*: <http://www.dhsspsni.gov.uk/menhealth.pdf>

⁴³ *The Bamford Review of Mental Health and Learning Disability (Northern Ireland). Mental Health Improvement and Well-Being – A Personal, Public and Political Issue*. 2007. p101 www.dhsspsni.gov.uk/legal_issues_consultation_report.doc

⁴⁴ DHSSPS. 2009. *Delivering the Bamford Vision: The response of Northern Ireland Executive to the Bamford Review of Mental Health and Learning Disability Action Plan 2009–2011*: p66. www.dhsspsni.gov.uk/bamford_action_plan_2009-2011.pdf

The latest iteration of a mental health plan, the Bamford Action Plan 2012–15, is expected to be issued for public consultation later this year⁴⁵.

The *Northern Ireland Suicide Prevention Strategy* for 2006 to 2011 does not make reference to sport or physical activity as a potentially beneficial factor in tackling suicide rates⁴⁶. However, it is also noted in the strategy document that ‘there is limited evidence available in relation to interventions that are effective in reducing the risk of suicide and self-harm’, though tackling some of the risk factors – such as depression, alcohol and drug misuse, personality disorders, hopelessness, low self-esteem, bereavement or social isolation – is noted as important ‘as part of a broader approach to promoting mental health and well-being’⁴⁷. The DHSSPS Minister announced in January 2011 that the Suicide Strategy would be extended until 2013 to allow for the development of initiatives.

The current sport strategy for Northern Ireland, *Sport Matters*, contains reference to the social and physical benefits of sport and physical activity⁴⁸, but no specific mention of its contribution to mental health. A leaflet has been produced by Sport NI – *Active People, Healthy Minds* – which emphasises the mental and physical health benefits of participating in 150 minutes of moderate physical activity per week⁴⁹. The leaflet states that regular physical activity can help reduce the risk of physical diseases such as obesity, coronary heart disease and stroke, but also help to promote good mental health by:

- Improving mood
- Enhancing a sense of well-being
- Reducing anxiety
- Combating negative emotions
- Improving self-esteem, body image and confidence
- Protecting against depression

In the previous Programme for Government (2008–2011), suicide prevention was included as a key goal⁵⁰. PSA 8 ‘Promoting Health and Health Inequalities’, Indicator 12 ‘By 2011 achieve a reduction of at least 15% in the suicide rate’ is specified as a responsibility of DHSSPS.

However, within the current Programme for Government, no specific commitment is given for reducing suicide rates. Furthermore, of the commitments provided for either

⁴⁵ Response to written question to the Minister of Health, Social Services and Public Safety: AQW 7680/11-15 (3.2.12).

⁴⁶ DHSSPS. 2006. *Protect Life, A Shared Vision: The Northern Ireland Suicide Prevention Strategy and Action Plan 2006–2011*: <http://nia1.me/4p>

⁴⁷ DHSSPS. 2006. *Protect Life: A Shared Vision. The Northern Ireland Suicide Prevention Strategy and Action Plan 2006–2011*: <http://nia1.me/4p>

⁴⁸ DCAL & Sport NI. 2009. *Sport Matters: The Northern Ireland strategy for sport and physical recreation 2009–2019*; see, for example, p3: http://www.dcalni.gov.uk/sport_matters.pdf

⁴⁹ *Active People, Healthy Minds*: <http://nia1.me/ck>

⁵⁰ Response to Assembly Question - AQW 4878/11

DHSSPS or DCAL, none specifically refer to either mental health or the link between mental health and physical activity.

A number of building blocks are included under the general heading of 'Priority 2: Creating opportunities, tackling disadvantage and improving health and wellbeing'. Of relevance here is the Bamford (Mental Health and Learning Disability) Action Plan 2012–15 and the Dementia Strategy and Action Plan. Under 'Priority 4: Building a strong and shared community' the Sports strategy *Sport Matters* is included.

5.2 Scotland

In 2008, the Scottish Government published a guidance paper aimed specifically at improving the physical health and well-being of those experiencing mental illness⁵¹. This paper states that there are strong links between poor physical health and poor mental health.

Evidence is cited, for example, that has established that there are increased mortality rates from cardiovascular disease in people with severe mental illness, and that there is a clear link between depression and cardiovascular disease. A range of factors, such as social isolation and medication, may contribute to the fact that those with a mental illness are more likely to be obese or suffer from diabetes. Poor diet and a lack of exercise are potentially more common among those with a mental illness, and smoking is up to twice as common among this group than the general population. Substance use may also be higher due to attempts to self-medicate and block out disturbing symptoms.

All of these factors suggest that not only is it likely that physical activity can help to alleviate some of the symptoms of mental illness, but also that the mentally ill are more likely to be in poor physical condition and therefore require a programme of physical activity more than those in average physical condition.

The current mental health policy document for Scotland, *Towards a Mentally Flourishing Scotland: Policy and Action Plan 2009–2011*⁵² follows the evidence cited in the previous document in recognising the causal and symptomatic link between physical and mental health. Among the effective interventions described for reducing the prevalence of mental health problems are improving psychological or behavioural skills, preventing discrimination and abuse, and also promoting better physical health⁵³. A specific commitment is provided in the policy for improving the physical condition of those with mental health problems:

⁵¹ Scottish Government. 2008. *Mental Health in Scotland: Improving the Physical Health and Well-Being of those Experiencing Mental Illness*: <http://www.scotland.gov.uk/Publications/2008/11/28152218/16>

⁵² *Towards a Mentally Flourishing Scotland: Policy and Action Plan 2009-2011*: <http://www.scotland.gov.uk/Publications/2009/05/06154655/0>

⁵³ *Towards a Mentally Flourishing Scotland*: pp12, 48.

Commitment 21: NHS Health Scotland will review evidence-based approaches and develop health improvement information on smoking cessation, weight management and physical activity designed for people with mental health problems; and will work with NHS Education for Scotland to build knowledge and skills in the workforce⁵⁴.

A new health policy for Scotland has been drafted and consulted, and is expected to be launched in spring 2012⁵⁵. It is not clear at present to what extent physical activity features within this strategy.

⁵⁴ *Towards a Mentally Flourishing Scotland*: p48.

⁵⁵ *Mental Health Strategy for Scotland*: <http://www.scotland.gov.uk/Publications/2011/09/01163037/0>