



**AN EVALUATION  
OF ROLLIN' WITH  
THE PUNCHES: A  
Boxing Intervention  
for Mental Health**

**May 2023**



[www.fight4change.org.uk](http://www.fight4change.org.uk)

# ABOUT US

Fight 4 Change (F4C) was established in 2009 in response to the growing salience of the use of boxing as a method of channelling young people at risk and in the criminal justice system. Through applying a what works approach to our delivery blended mentoring and wider personal pro- social development activities to enable participants overcome challenges and integrate into society. As the charity has evolved, so has our offer which extends beyond this agenda, with our work delivering specifically for women and girls, growing our youth voice and advocacy work with the young advisors, and extending our offer for people with identified mental health needs.

We designed Rollin with the Punches with participants in 2019, with the goal impacting on a community (adult working aged) population who have been under invested in despite growing concerns about mental health in a backdrop of systemic inequality experienced by the targeted participant group.

## THE RESEARCH

This research was commissioned by Fight 4 Change, part funded by London Metropolitan University and undertaken by the Performance with Purpose Research Centre. London Metropolitan University Performance with Purpose Research Centre London Metropolitan University's Centre for Performance. The research was undertaken by Dr. Stephen Hills and Dr. Nwando Onuigbo-Chatta.



## FUNDING SUPPORTERS



Garfield Weston  
FOUNDATION

## PROJECT PARTNERS



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# FOREWORD

We are delighted to present the Rollin with the Punches research report. Since 2009 when Fight for Change was established, we instinctively knew our work was having a positive impact on people's mental health and wellbeing but did not have the tools and resources to independently verify our work. This report goes some way to uncovering how boxing contributes to positive mental health and how if harnessed correctly boxing can reduce the effects of debilitating conditions such as anxiety, stress and depression.

The emergence and growth of social prescribing demonstrates the recognition and need for the voluntary sector to support the NHS and other health bodies deliver innovative alternatives to clinical interventions. We hope that this report positions boxing and wider physical activity blended with mentoring and personal development opportunities as a credible option for commissioners and practitioners in the future.

I'd like to thank Comic Relief for investing in this work and trust the findings, learnings and recommendations are taken onboard for future work in the mental health and sport space. May I extend my thanks to all the staff at Fight for Change whose tireless work and approach is vital to all we do. I'd also like to thank Dr Stephen Hills and his research team for embedding themselves in the charity over the last three years. Finally, to the participants of Rollin with the Punches who took part in the study thank you for your efforts and honesty in the data collection. It has been a great pleasure to see so many of you thriving and moving forwards positively.

*Rebecca Donnelly MBE Chief Executive, Fight 4 Change*



# MENTAL HEALTH IN CONTEXT

The traditional medical model advocates treating mental disorders in the same way as physical diseases using medication (Deacon, 2013). Such a silo approach fails to identify and treat the physical and social problems associated with mental illness and does not reflect its complexity (Deacon & McKay, 2015), which requires that mental health, physical health and social and emotional wellbeing be treated holistically (Pasquali, et al., 1989; Ohara-Hirano, et al., 2004; Naylor, et al., 2016). The stigma of mental health inhibits sufferers from accessing mainstream treatments (Brodie, et al., 2011). Physical activity is universally acknowledged to be an important part of healthy functioning (Bailey, et al., 2013). Physical activity, if well designed, has been conclusively found to have beneficial effects for mental health and social and emotional wellbeing (Penedo & Dahn, 2005; Richardson, et al., 2005). However, mental health sufferers face complex barriers in accessing physical activity (Paluska & Schwenk, 2000), requiring a tailored physical activity intervention that is accessible to those with mental illness (Richardson, et al., 2005).

## WHY THIS IS PROBLEMATIC?

In any given week in England, one in six people report experiencing a common mental health problem, such as anxiety or depression (McManus, et al., 2016). Two in five of GP consultations are about mental health (Mind, 2018). The total economic and social cost of mental illness is over £11 billion a year (Naylor, et al., 2016). On average, mental health sufferers die 15 to 20 years earlier than those who do not suffer from mental health problems (Thornicroft, 2013). Minority groups are disproportionately affected by mental health problems in England (McManus, et al., 2016; NHS, 2017; Public Health England, 2019; ONS, 2019). These challenges presented themselves prior to the Covid-19 pandemic which amplified mental health declines and further need to invest in non-clinical approaches.



# ROLLIN WITH THE PUNCHES IN PRACTICE: WHAT WE DELIVER

Rollin' with the Punches is a boxing-based intervention that uses circuit training, volunteer/social action components and on-demand counselling services to treat mental health, physical health and social and emotional wellbeing holistically.

Fight 4 Change coaches and workers have extensive experience working with the 'hardest to help' and the most disadvantaged groups. They are enthusiastic, knowledgeable and supportive physical activity leaders able to instil confidence in participants' ability to recover and achieve good wellbeing.

The boxing sessions were designed to work as an analogy. Boxing works effectively as an analogy because it is fun and meaningful. Participants can be framed as fighters who can be resilient to life's challenges by using the rich content of boxing. The curriculum covered a series of modules aimed at alleviating symptoms of mental illness and reducing the vulnerability of participants.

- The Mental Toughness module, designed to develop resilience in participants through drills and games, and reflection on how their skills make them more resilient.
- The 'Controlling the Ring' module aimed to train participants in how to control emotions, such as anger, within the ring and how to control nerves in the build-up to a fight. Participants were also trained in sport psychology techniques including meditation, progressive muscle relaxation, breathing exercises, and emotional recovery techniques



- The Positive Mental Attitude module used several 'underdog' boxing stories to inspire participants to focus on a positive mental attitude no matter how impossible the task may seem. Participants were trained applying sport psychology techniques, including visualisation, positive self-talk, and undertook drills where the odds were stacked against them.

- The 'Climbing Off the Canvas' module aimed to demonstrate to participants that it is possible to achieve a desired outcome even when things don't go to plan and adversity occurs. Participants developed coping strategies and routines to deal with adverse scenarios before they encounter them.

- Symptoms of depression include giving up on the 'will to live' and an inability to make decisions. Goal-setting was used to overcome these barriers and pursue physical activity.

- Mental health sufferers can accept prejudices about mental illness and turn against themselves, leading to a loss of self-esteem. The 'Belief of a Champion' module used boxing drills to counter these symptoms, and encouraged participants to focus on their achievements and how they made them feel.

- To counter symptoms of depression, participants used boxing drills that focused on teamwork, seeking help and developing trust. They were then asked to reflect on other scenarios and challenges in their life where they could benefit from teamwork and other sources of help.

- Stigma can result in mental health sufferers turning to substance abuse, so the 'Camp Conditioning' module taught participants how to achieve optimum conditioning by staying away from unhealthy foods, alcohol, drugs and smoking. This was all combined with discussion groups, counselling session when required and a What's App group to aid as a community of those participating. Rollin' with the Punches is a boxing-based intervention, designed to treat mental health, physical health and social and emotional wellbeing holistically as an alternative to clinical and medical intervention, as part of a social prescription agenda.





# RESEARCH DESIGN



The research was designed to gain knowledge and answer two principal research questions:

1. What is the effect of Rollin' with the Punches on relationships, self-belief, mental health and wellbeing, physical activity and health outcomes?
2. How does Rollin' with the Punches affect relationships, self-belief, mental health and wellbeing, physical activity and health outcomes?

The research questions were answered by using a mixed-methods approach with a quasi-experiment design to quantitatively measure the effect of the programme and qualitative data to interpret how any effects were achieved.

Project outcomes were measured using an online questionnaire and propensity score matching was used to match experimental and control units from which effect was determined using repeated measures t-tests. Qualitative data on programme mechanisms and processes was collected via observation and semi-structured interviews, the data from which was analysed using thematic analysis.

Combining both quantitative and qualitative data enabled the research team to take advantage of the relative and complementary strengths of each data type to answer the posited research questions, a guiding principle of mixed method research (Johnson & Turner, 2003). The use of a time efficient quantitative questionnaire achieved breadth; a sufficient number of responses was achieved so that the results from our sample could be extrapolated to the population of all Rollin' with the Punches participants (Firestone, 1993), whereas the use of semi-structured interview collecting qualitative data achieved depth; capturing the complexity of the factors behind effects (Creswell, 2012). The collection of uniform data via the questionnaire allows for measurement of the effects of participating in Rollin' with the Punches and the counterfactual of not participating in the pursuit of internal validity and causal inference (Burtless, 1995), whereas the use of flexible semi-structured interviews within the natural setting of the intervention allows for probing of factors to understand mechanisms behind effects (or lack of) and external validity. Finally, the use of quantitative data aims to objectively measure effect, whereas the use of qualitative data aims to subjectively interpret the meanings that participants brought to the intervention (Denzin & Lincoln, 2011). In sum, the use of mixed methods provides "a plurality of interests, voices, and perspectives" (Greene & Caracelli, 1997, p. 14) to measure and understand effect.

# KEY FINDINGS

## Quantitative analysis

Rollin with the punches assessed 14 variables relating to mental health and wellbeing. The research found a positive impact in 11 of these variables. Of the variables for which there was a positive effect, Rollin' with the Punches had the greatest effect on sense of community, followed by mental wellbeing, physical health, anxiety, mental health, mental health self-mastery, self-efficacy, coping self-efficacy, health satisfaction, life satisfaction and stress.

## Qualitative analysis

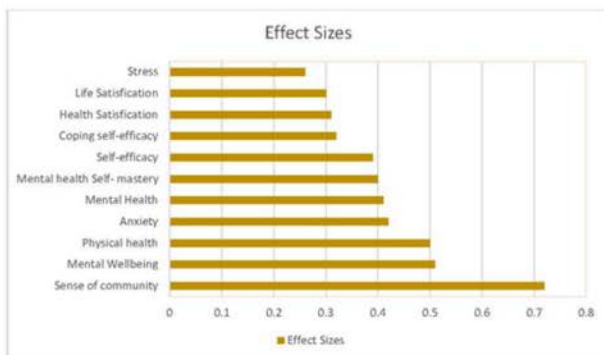
The thematic analysis found six emerging themes, providing a wider context to the quantitative metrics presented.

# RANKING OF EFFECTS

Rollin' with the Punches had a positive effect on 11 out of 14 variables. The program had no effect on positive relationships, self-esteem or number of days physically active.



Rank	Variable	d
1.	Sense of community	0.73
2.	Mental wellbeing	0.52
3.	Physical health	0.5
4.	Anxiety	-0.44
5.	Mental health	0.41
6.	Mental health self-mastery	0.4
7.	Self-efficacy	0.38
8.	Coping self-efficacy	0.32
9.	Health satisfaction	0.31
10.	Life satisfaction	0.3
11.	Stress	-0.26







**Theme #1:** Fragile participants seeking alternative treatment

"My husband has a mental health disability and I had been struggling with caring for him for a long period of time and he was very, very ill and I used alcohol as a way of dealing with that, so I was quite fragile"

"I had a very bad break up and experienced some domestic violence, requiring that I be on anti-depressants."

"Before boxing, I was medicating too much on tablets from the doctor. And, and I was drinking a little too much as well. I wanted to do something else."

"I had clinical depression, but I didn't want to take medicine because I feel that was just a plaster."

**Theme #2:** Happy and confident individuals with something to look forward to and less reliance on medications and other substances.

"I definitely feel a lot happier in general [...] I've been meeting up with others outside of the course, so that's really great[...] The course has, yeah, changed the way I've been thinking and behaving."

"I've never, ever felt sorry I went boxing. Only ever felt sorry if I didn't go boxing. Always felt twenty times better than I did before I went in."

"Rollin' with the Punches gave me a focus, goals and it made me feel good when I achieve those in the gym."

**Theme #3:** A caring sense of community with people on a similar path

"Camaraderie, the community spirit, you know, all of us have been through something in life. You can feel it. There was a few vulnerable people in the same place, and, you know, you felt better that if they made it and you made it, then you're doing good."

"It's made me feel good. I've met some good people on the programme that hopefully I will stay in contact for many years to come. I've made some friends for life."

"I just think it was the care and support of my group. The people who run the programmes were there for us if we needed them. You feel supported to face some challenges."

#### **Theme #4: Boxing as a stimulant or alternative**

"It's very hard to be depressed and be in your own head when your body is screaming at you because you're doing so many squats [laughs]. It's very difficult to be depressed when your body is just like Oh my God! [laughs] So pick your struggles, you are in your head or you're in your body. Which one is it?"

"Boxing is very good in terms of being present in the moment and releasing endorphins, just giving you that kind of intense euphoria."

#### **Theme #5: Boxing as an outlet**

When you're boxing, you take it out on your frustration. It helps me to release my frustration, physically. I'd come to boxing like angry or depressed and then literally wake my body up and then it literally lifted my mood."

"It's like the emotional release of punching the bag. It's about controlling your anger and aggression as well."

"I'd leave here, like you know, less anxious, physically exhausted but it helped my sleep. My sleep was beautiful. You know anyone with mental health issues, sleep is often a struggle."

#### **Theme #6: Boxing as an analogy**

"It's much more about fighting as it were [laughs] because I think we're always fighting things and it's really hard. Life is really, really challenging."

"The coach asks us to do ten punches, then they ask for one more. Just like in life, give me one more, keep going. They teach us certain skills with different drills. Like teaching us to slip a the punch, just like in life, you move to the side, you miss that curve ball. Just finding different ways of working and looking at things."





# CONCLUSIONS AND IMPLICATIONS



This study has conclusively evidenced the effectiveness of Rollin' with the Punches as an intervention for tackling mental health problems, whilst simultaneously improving the physical health and social and mental wellbeing of participants. Rollin' with the Punches had a significant effect on 11 out of the 14 variables studied. It's greatest effect was on facilitating a sense of community, where the programme had a medium to large effect ( $d = 0.73$ ), amongst participants, which was echoed in the qualitative findings that identified the importance of being with people on a similar path and the supportive and caring nature of programme staff. The programme also had a medium effect size on mental wellbeing ( $d = 0.52$ ) and physical health ( $d = 0.5$ ), demonstrating the duality of its effectiveness. Small to medium effects were found for the other significant variables, including anxiety reduction ( $d = -0.44$ ), mental health ( $d = 0.41$ ), mental health self-mastery ( $d = 0.4$ ), self-efficacy ( $d = 0.38$ ), coping self-efficacy ( $d = 0.32$ ), health satisfaction ( $d = 0.31$ ), life satisfaction ( $d = 0.3$ ) and stress reduction ( $d = -0.26$ ). These effects made participants less reliant upon medications and other substances being used to self-medicate

- This study adds to the evidence that physical activity is an effective non-medical intervention for mental health problems (Penedo & Dahn, 2005; Richardson, et al., 2005)
- Boxing is a particularly effective form of physical activity because of its ability to serve as an outlet for anger and stress.
- Boxing also provides a rich tapestry of analogies to teach skills and values for boxing that can be reframed to make participants fighters able to cope with the challenges of their mental illness.

These effects made participants less reliant upon medications and other substances being used to self-medicate. The use of boxing was found to be effective in treating mental health because it served as a stimulant, as consistent with research that established physical activity as a stimulant (Stephens, 1988; Camacho et al., 1991; Pederson & Ullum, 1994; Paluska & Schwenk, 2000; Strawbridge, et al., 2002; Peluso & Andrade, 2005), and because it serves as an alternative to unhealthy behaviours, which are incompatible with being physically active through boxing. However, these mechanisms are not unique to boxing and would operate with any physical activity intervention. However, where boxing was found to be unique was in its ability to serve as an outlet for anger and stress through punching a bag, which echoes the findings of van Inglen (2011). Furthermore, boxing was effectively used as an analogy, in particular with regard to being a fighter and rolling with the punches from mental health problems, echoing the findings of Morton et al. (2019) that the boxer identity was an appropriate alternative to the addict identity.

This study has conclusively evidenced the effectiveness of Rollin' with the Punches as an intervention for tackling mental health problems, whilst simultaneously improving the physical health and social and mental wellbeing of participants. This study adds to the evidence that physical activity is an effective non-medical intervention for mental health problems (Penedo & Dahn, 2005; Richardson, et al., 2005), but goes further by establishing that boxing is a particularly effective form of physical activity because of its ability to serve as an outlet for anger and stress and because it provides a rich tapestry of analogies to teach skills and values for boxing that can be reframed to make participants fighters able to cope with the challenges of their mental illness. Such benefits from boxing cannot be assumed (Coalter, 2013), rather boxing needs to be intentionally designed so to achieve the desired change in participants (Bruening, et al., 2013), such as how boxing analogies can support mental health sufferers (Hills, et al., 2018).



# REFERENCES

Adler, P. A., & Adler, P. (1994). Observational techniques. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (p. 377–392). Sage Publications, Inc.

Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: An underestimated investment in human capital?. *Journal of physical activity and health*, 10(3), 289-308.

Becker, H. S. (1996). The epistemology of qualitative research. *Ethnography and human development: Context and meaning in social inquiry*, 27, 53-71.

Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *British journal of sports medicine*, bjsports90185.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.

Brodie, I., Goldman, R., & Clapton, J. (2011). *Mental health service transitions for young people*. London: Social Care Institute for Excellence.

Bruening, J. E., Peachey, J. W., Evanovich, J. M., Fuller, R. D., Murty, C. J. C., Percy, V. E., ... & Chung, M. (2015). Managing sport for social change: The effects of intentional design and structure in a sport-based service learning initiative. *Sport Management Review*, 18(1), 69-85.

Burtless, G. (1995). The case for randomized field trials in economic and policy research. *Journal of economic perspectives*, 9(2), 63-84.

Camacho, T. C., Roberts, R. E., Lazarus, N. B., Kaplan, G. A., & Cohen, R. D. (1991). Physical activity and depression: evidence from the Alameda County Study. *American journal of epidemiology*, 134(2), 220-231.

Cartwright, N. (2007). *Hunting causes and using them: Approaches in philosophy and economics*. Cambridge University Press.

Chandola, T., Britton, A., Brunner, E., Hemingway, H., Malik, M., Kumari, M., ... & Marmot, M. (2008). Work stress and coronary heart disease: what are the mechanisms?. *European heart journal*, 29(5), 640-648.



- Cheema, B. S., Davies, T. B., Stewart, M., Papalia, S., & Atlantis, E. (2015). The feasibility and effectiveness of high-intensity boxing training versus moderate-intensity brisk walking in adults with abdominal obesity: a pilot study. *BMC sports science, medicine and rehabilitation*, 7(1), 1-10.
- Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British journal of health psychology*, 11(3), 421-437.
- Chlan, L., Savik, K., & Weinert, C. (2003). Development of a shortened state anxiety scale from the Spielberger State-Trait Anxiety Inventory (STAI) for patients receiving mechanical ventilatory support. *Journal of nursing measurement*, 11(3), 283-293.
- Coalter, F. (2013). *Sport for development: What game are we playing?*. Routledge.
- Cohen, J. (1992). Statistical power analysis. *Current directions in psychological science*, 1(3), 98-101.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior*, 385-396.
- Corrigan, P. W. (2005). *On the stigma of mental illness: Practical strategies for research and social change*. American Psychological Association.
- Creswell, J. (2012). *Qualitative inquiry and research design: Choosing from five methods*. Thousand Oaks, CA: Sage
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 39(3), 124-130.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. *Handbook of mixed methods in social and behavioral research* (pp. 209-240).
- Daumit, G. L., Goldberg, R. W., Anthony, C., Dickerson, F., Brown, C. H., Kreyenbuhl, J., ... & Dixon, L. B. (2005). Physical activity patterns in adults with severe mental illness. *The Journal of nervous and mental disease*, 193(10), 641-646.



Deacon, B. J. (2013). The biomedical model of mental disorder: A critical analysis of its validity, utility, and effects on psychotherapy research. *Clinical psychology review, 33*(7), 846-861.

Deacon, B. J., & McKay, D. (2015). The biomedical model of psychological problems: A call for critical dialogue. *Lancet, 16*, 2-3.

Deaton, A. (2010). Understanding the mechanisms of economic development. *Journal of Economic Perspectives, 24*(3), 3-16.

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage.

Elliott, M. N., Kanouse, D. E., Burkhart, Q., Abel, G. A., Lyratzopoulos, G., Beckett, M. K., ... & Roland, M. (2015). Sexual minorities in England have poorer health and worse health care experiences: a national survey. *Journal of general internal medicine, 30*, 9-16.

Feldman, D. B., & Crandall, C. S. (2007). Dimensions of mental illness stigma: What about mental illness causes social rejection?. *Journal of Social and Clinical Psychology, 26*(2), 137-154.

Firestone, W. A. (1993). Alternative arguments for generalizing from data as applied to qualitative research. *Educational researcher, 22*(4), 16-23.

Fox, K. R. (1999). The influence of physical activity on mental well-being. *Public health nutrition, 2*(3a), 411-418.

Gammage, K. L., van Ingen, C., & Angrish, K. (2022). Measuring the effects of the shape your life project on the mental and physical health outcomes of survivors of gender-based violence. *Violence against women, 28*(11), 2722-2741.

Ghaffar, A., Gallagher, R., Ketigian, L., Rubin, L., Scheid, Z., Zhu, J., ... & Leder, A. (2020). Effect of Non-contact Boxing on Non-motor Symptoms in Parkinson's Disease (445).

Greene, J. C., & Caracelli, V. J. (1997). Defining and describing the paradigm issue in mixed-method evaluation. *New directions for evaluation, 74*, 5-17.



Hakim, C. (2000). *Research design: Successful designs for social and economic research*. London: Routledge.

Harris, C., & Barraclough, B. (1998). Excess mortality of mental disorder. *The British journal of psychiatry*, 173(1), 11-53.

Hays, R. D., Schalet, B. D., Spritzer, K. L., & Cella, D. (2017). Two-item PROMIS® global physical and mental health scales. *Journal of patient-reported outcomes*, 1(1), 2.

Heffernon, K., Mallery, R., Gay, C., & Elliott, S. (2013). 'Leave all the troubles of the outside world': a qualitative study on the binary benefits of 'Boxercise' for individuals with mental health difficulties. *Qualitative research in sport, exercise and health*, 5(1), 80-102.

Hermanns, M., Mastel-Smith, B., Donnell, R., Quarles, A., Rodriguez, M., & Wang, T. (2021). Counterpunching to improve the health of people with Parkinson's disease. *Journal of the American Association of Nurse Practitioners*, 33(12), 1230-1239.

Hills, S., Gomez Velasquez, A., & Walker, M. (2018). Sport as an analogy to teach life skills and redefine moral values: A case study of the 'Seedbeds of Peace' sport-for-development programme in Medellin, Colombia. *Journal of Sport for Development*, 6(10), 19-31.

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review*, 105(4), 765-789.

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, 18(1), 3-20.

Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral nutrition and physical activity*, 7(1), 40.

Jerusalem, M., & Schwarzer, R. (1995). Generalized self-efficacy scale. *Measures in health psychology: A user's portfolio. Causal and control beliefs*, 35-37.



Jin, P. (1989). Changes in heart rate, noradrenaline, cortisol and mood during Tai Chi. *Journal of psychosomatic research*, 33(2), 197-206.

Johnson, B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. *Handbook of mixed methods in social and behavioral research*, 297-319.

Jormann, J., & Gotlib, I. H. (2010). Emotion regulation in depression: relation to cognitive inhibition. *Cognition and Emotion*, 24(2), 281-298.

Luszczynska, A., Gutiérrez-Doña, B., & Schwarzer, R. (2005). General self-efficacy in various domains of human functioning: Evidence from five countries. *International journal of Psychology*, 40(2), 80-89.

Lyon, D., Owen, S., Osborne, M., Blake, K., & Andrades, B. (2020). Left/Write//Hook: A mixed method study of a writing and boxing workshop for survivors of childhood sexual abuse and trauma. *International Journal of Wellbeing*, 10(5).

Marshall, G. N., & Lang, E. L. (1990). Optimism, self-mastery, and symptoms of depression in women professionals. *Journal of personality and social psychology*, 59(1), 132.

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (Vol. 41). Sage publications.

McDevitt, J., Snyder, M., Miller, A., & Wilbur, J. (2006). Perceptions of barriers and benefits to physical activity among outpatients in psychiatric rehabilitation. *Journal of Nursing Scholarship*, 38(1), 50-55.

McManus, S., Bebbington, P. E., Jenkins, R., & Brugha, T. (2016). Mental health and wellbeing in England: the adult psychiatric morbidity survey 2014. NHS digital.

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of community psychology*, 14(1), 6-23.

Mind. (2018). 40 per cent of all GP appointments about mental health. Mind. <https://www.mind.org.uk/news-campaigns/news/40-per-cent-of-all-gp-appointments-about-mental-health/>



Moore, L. L., Gao, D., Bradlee, M. L., Cupples, L. A., Sundarajan-Ramamurti, A., Proctor, M. H., ... & Ellison, R. C. (2003). Does early physical activity predict body fat change throughout childhood?. *Preventive medicine*, 37(1), 10-17.

Morton, S., O'Brien, K., & O'Reilly, L. (2019). Boxing and substance use rehabilitation: building skills and capacities in disadvantaged communities. *Community development journal*, 54(3), 541-559.

Myers, J. (2003). Exercise and cardiovascular health. *Circulation*, 107(1), e2-e5.

Nabkasom, C., Miyai, N., Sootmongkol, A., Junprasert, S., Yamamoto, H., Arita, M., & Miyashita, K. (2006). Effects of physical exercise on depression, neuroendocrine stress hormones and physiological fitness in adolescent females with depressive symptoms. *European journal of public health*, 16(2), 179-184.

Naylor, C., Das, P., Ross, S., Honeyman, M., Thompson, J., & Gilbert, H. (2016). Bringing together physical and mental health: A new frontier for integrated care. Kings Fund.  
<https://www.kingsfund.org.uk/publications/physical-and-mental-health>

NHS. (2017) Five year forward view for mental health: One year on. NHS.  
<https://www.england.nhs.uk/wp-content/uploads/2017/03/fyfv-mh-one-year-on.pdf>

Ohara-Hirano, Y., Kaku, T., Hirakawa, T., Noguchi, Y., Hirata, N., Shinkoda, H., ... & Ohki, M. (2004). Uterine cervical cancer: a holistic approach to mental health and its socio-psychological implications. *Fukuoka igaku zasshi= Hukuoka acta medica*, 95(8), 183-194.

ONS. (2019). Disability, well-being and loneliness, UK: 2019. Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/disability/bulletins/disabilitywellbeingandlonelinessuk/2019>

Paluska, S. A., & Schwenk, T. L. (2000). Physical activity and mental health. *Sports medicine*, 29(3), 167-180. Pasquali, E. A., Arnold, H. M., & DeBasio, N. (1989). *Mental health nursing: A holistic approach*. CV Mosby.



Pedersen, B. K., & Ullum, H. (1994). NK cell response to physical activity: possible mechanisms of action. *Medicine and science in sports and exercise*, 26(2), 140-146.

Peluso, M. A. M., & Andrade, L. H. S. G. D. (2005). Physical activity and mental health: the association between exercise and mood. *Clinics*, 60(1), 61-70.

Penedo, F. J., & Dahn, J. R. (2005). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current opinion in psychiatry*, 18(2), 189-193.

Peterson, N. A., Speer, P. W., & McMillan, D. W. (2008). Validation of a brief sense of community scale: Confirmation of the principal theory of sense of community. *Journal of community psychology*, 36(1), 61-73.

Public Health England. (2019) 2. Mental health: environmental factors. Public Health England. <https://www.gov.uk/government/publications/better-mental-health-jsna-toolkit/2-understanding-place>

Richardson, C. R., Faulkner, G., McDevitt, J., Skrinar, G. S., Hutchinson, D. S., & Piette, J. D. (2005). Integrating physical activity into mental health services for persons with serious mental illness. *Psychiatric services*, 56(3), 324-331.

Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). Acceptance and commitment therapy. *Measures package*, 61(52), 18.

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative Interviewing: The Art of Hearing Data* (2nd ed.). Thousand Oaks, CA: Sage.

Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: concepts, consequences, and initiatives to reduce stigma. *European psychiatry*, 20(8), 529-539.

Shultz, S. P., Stoner, L., Lambrick, D. M., & Lane, A. M. (2014). A boxing-oriented exercise intervention for obese adolescent males: Findings from a pilot study. *Journal of sports science & medicine*, 13(4), 751.



Smith, R. E., & Smoll, F. L. (1990). Self-esteem and children's reactions to youth sport coaching behaviors: A field study of self-enhancement processes. *Developmental Psychology*, 26(6), 987.

Spiggle, S. (1994). Analysis and interpretation of qualitative data in consumer research. *Journal of consumer research*, 21(3), 491-503.

Sport England's Single Item Measure (SIM)

Stephens, T. (1988). Physical activity and mental health in the United States and Canada: evidence from four population surveys. *Preventive medicine*, 17(1), 35-47.

Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh mental well-being scale (WEMWBS): a Rasch analysis using data from the Scottish health education population survey. *Health and quality of life outcomes*, 7(1), 1-8.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques*. Thousand Oaks, CA: Sage publications.

Strawbridge, W. J., Deleger, S., Roberts, R. E., & Kaplan, G. A. (2002). Physical activity reduces the risk of subsequent depression for older adults. *American journal of epidemiology*, 156(4), 328-334.

Taylor, S. M., & Dear, M. J. (1981). Scaling community attitudes toward the mentally ill. *Schizophrenia bulletin*, 7(2), 225- 240.

Thornicroft, G. (2013). Premature death among people with mental illness. *Bmj*, 346.

Trost, S. G., Owen, N., Bauman, A. E., Sallis, J. F., & Brown, W. (2002). Correlates of adults' participation in physical activity: review and update. *Medicine & science in sports & exercise*, 34(12), 1996-2001.

Usher, M., Stanbury, L., Cheeseman, V., & Faulkner, G. (2007). Physical activity preferences and perceived barriers to activity among persons with severe mental illness in the United Kingdom. *Psychiatric services*, 58(3), 405-408.



van Ingen, C. (2011). Spatialities of anger: Emotional geographies in a boxing program for survivors of violence. *Sociology of Sport Journal*, 28(2), 171-188.

Warburton et al. (2006)

World Health Organization (1998). The World Health Organization quality of life assessment (WHOQOL): development and general psychometric properties. *Social science & medicine*, 46(12), 1569-1585.





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