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RESEARCH ARTICLE

Evaluation of the Coping Through Football Project: Physical Activity and Psychosocial Outcomes

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Abstract:

Background:

Football is increasingly used as an adjunct intervention for people with mental problems, intended to improve their mental, physical and social health.

Objective:

The aim of this study is to evaluate psychosocial outcomes and physical activity in participants of “Coping Through Football” (CTF), a London-based football intervention for people who receive secondary mental health care.

Methods:

In a one group pre-post study design, participants completed self-report measures on physical activity and mental well-being at baseline (*i.e.* when joining the intervention), and at 6 months and 12 months thereafter. Perceived quality of life was measured using the WHOQOL-BREF which assess domains such as physical health, psychological well-being, social relationships and environment. The Rosenberg Self-esteem scale was used to measure self-esteem in the participants. Self-reported physical activity (vigorous activity, moderate activity, walking and sitting) was assessed using the short form of the International Physical Activity questionnaire (IPAQ).

Results:

For the 6 months follow up, data was available for 72 participants; at 12 month follow up data was available for 32 participants. Levels of vigorous activity doubled between baseline (102.98 min/week) and the short term follow up (196.85 min/week) as well as between baseline (117.26 min/week) and the one year follow up (248.23 min/week). For moderate activity, we find similar results with an improvement from 78.13 min/week at baseline to 149 min/week at the short term follow up and an increase from 87.74 min/week at baseline to 209.61 min/week. Increases on psychosocial measures were more modest, reaching significance at only the 6 month time point. There were no statistically significant changes with regard to the time spent sitting or walking at either the 6 or the 12 month follow up.

Conclusion:

While the impact on psychosocial measures was only moderate, the increase in physical activity in participants encourages the use of adjunct football interventions for people with mental health problems as a means to increase physical activity levels.

Keywords: Soccer, Football, Evaluation, Social Inclusion, Mental health, Public health, Physical Activity.

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1. INTRODUCTION

Exercise interventions as adjunct treatments for people with mental health problems have been shown to be effective in increasing quality of life, physical health, mood, and psychosocial functioning in addition to aiding anxiety and depression [1 - 6]. Of all these activities, football is not only effective in increasing important physical health aspects such as cardio-vascular and metabolic function [7], but has also social and emotional health benefits due to its nature as team sport and its potential to attract and connect people from a range of different socio-economical and/or cultural backgrounds [8 - 10]. For systematic review of evaluation studies using quantitative and/ or qualitative methods to investigate the impact of football interventions for people with mental health problems see Friedrich and Mason (2017) [11]. Football's potential to increase physical well-being, fitness and inclusion is particularly important to people with severe mental health problems, given frequent poor physical health and social isolation [12].

Coping Through Football (CTF) is a relatively long running scheme currently delivered in four boroughs in the northeast of London, experiencing varying degrees of social deprivation: Waltham Forest, Redbridge, Havering and Barking and Dagenham (www.copingthroughfootball.org). The project was initiated by a local charity, London Playing Fields Foundation, in collaboration with a range of stakeholders local to London including the local football club and the local NHS mental health Trust. From its outset, the project has been overseen by a steering group comprised of a wide range of stakeholders including local NHS representatives and Leyton Orient Trust

Participants are in receipt of secondary mental health care and take part in informal, in-competitive football training once or twice a week, each session lasting 90 minutes. In addition to the football training, participants are encouraged to attend events including tournaments, social gatherings and healthy living workshops. Occupational therapists are present during the training sessions and meet regularly with the individual participants to monitor physical and mental well-being as well as the achievement of personal goals and planned exit routes. The London Playing Fields Foundation in collaboration with Leyton Orient's Community Sports Programme and local National Health Service (NHS) bodies first conceived the project. We present quantitative outcome data collected routinely over the past five years (2012-17). Aim of this study is to investigate whether Coping Through Football as an adjunct intervention for people with mental health problems increases mental well-being and physical activity in its participants.

2. METHODS

Participants of Coping Through Football attend football training sessions that are delivered at three different football grounds in the Northeast of London. Each week four sessions for adults are offered and participants can choose which one(s) they want to visit. The training sessions are two hours long and usually start with a warm up which is followed by some technical football exercises and then 5-a-side games are played. Sessions are led by a football coach and one or two OTs. Before and after the sessions, the present OT carries out clinical check-ups with participants to monitor physical and mental well-being and discusses planned exit routes into volunteering opportunities and employment. The OTs also check well-being in informal conversations at the side-line of the playing field and offer support and advise when needed.

In this one group pre-post study design, measures of quality of life, self-esteem and physical activity were collected at the start of the program (baseline) as well as at 6 month and 12 month follow up in participants who consented to provide these as part of routine clinical check-up which is carried out by the Occupational therapists (OTs) working on the project. Participants did not have to give a reason for declining to complete measures and this did not affect their participation in any way.

2.1. Measures

Quality of life was measured using the WHOQOL-BREF quality of life assessment [13] which is comprised of 16 items on a 7-point Likert scale in domains such as physical health, psychological well-being, social relationships and environment. Self-esteem was measured using the Rosenberg Self-esteem scale [14]. This scale has ten items measuring positive and negative feelings about the self on a four-point Likert scale. The short form of the International Physical Activity questionnaire (IPAQ) [15] was used to assess self-reported physical activity for the past seven days for three activity levels: a) vigorous activity; b) moderate activity; and c) walking (minutes per day and days per week). Based on the participants' responses, minutes per week were calculated for these three activity levels. Lastly, 'Hours spent sitting per day' were also assessed with the IPAQ.

Paired t-tests were calculated to test for improvements between baseline and 6 month follow up as well as between

baseline and 12 month follow up (Table 2) for the psychosocial measures. We used the Wilcoxon Signed Rank Test to investigate the changes for physical activity, as this data was not normally distributed and therefore a parametric test could not be applied for this data. Since there was a difference in the number of participants for whom data was available at the 6 month and 12 month follow up, the baseline values differ for the two follow up comparisons.

3. RESULTS

329 participants (309 males, 94%) took part in the Coping Through Football Intervention between 2012-2017 with an average age of 30.6 years ($SD = 10.08$). The ethnic breakdown of this group is as follows: 122 white (37%), 98 black (30%), 59 Asian (18%), 22 mixed (7%), 15 other (5%), 13 unknown (4%).

Baseline and 6 month follow up data is available for 72 participants (22%), dropping to 32 participants at one year follow up. There are several reasons for the low number of participants for whom data was available: Firstly, some participants attend for less than six months (participants did not have to indicate reasons for dropping out of the project, however the main reason for discontinuing participation is the lack of interest in football as a form of exercise or dissatisfaction with the intervention according to the facilitators). Some participants took breaks from attendance and re-joined the initiative later, thereby missing some of the data collection. In some instances, participants decided not to take part in the check-up meetings or not all measures were collected. In some cases, staff was not available to cover check-up sessions with the participants. However, the gender and age profile of those with 6 month follow up data were similar to the participants of the scheme overall (92% male; mean age 31.7, $SD = 9.6$)

The ethnic breakdown for the 6 month and 12 month follow up can be seen in Table 1.

Table 1. Shows the ethnic breakdown for the participants for the 6 month and the 12 month follow up in order for frequency.

Race	Total Number (Percentage)	
	6 month follow up	12 month follow up
-		
Caucasian	30 (42%)	15 (35%)
Black	20 (28%)	13 (30%)
Asian	12 (17%)	9 (21%)
Mixed Race	7 (10%)	3 (7%)
(no information)	3 (4%)	3 (7%)
TOTAL	72 (100%)	43 (100)

Participants were referred to CTF through a range of channels: Community Mental Health Services (150; 46%), Acute Mental Health Services (54; 16%), Social/ Community Source (42; 13%), Access through mental health (29; 9%), Primary Care (29; 9%), Child or Adolescent services (14; 4%), unknown (11; 3%). At baseline participants self-described the nature of their difficulties: 181 participants chose a form of psychotic disorder (55%), 97 an emotional disorder (29%), 24 a neurodevelopmental disorder (7%), 15 a personality disorder (5%) and one a drug and alcohol problem (0.3%). The diagnosis for 35 participants (11%) was not reported. Since some patients indicated having more than one diagnosis, the numbers for the diagnoses add up to more than the number of participants/ 100%.

Out of the 72 participants, 37 had a psychosis (51%), 26 had emotional disorders (36%), 5 had neurodevelopmental disorders (7%), 4 had a personality disorder (6%). This diagnosis of one participant was not known. The source of referral for the participants was as follows: Community Mental Health 33 (46%), Access to Mental Health 14 (19%), Social/Community Source 12 (17%), Acute MH Services 8 (11%), Primary Care 3 (4%), Child/Adolescent Source 2 (3%)

As participants are referred to the intervention on a continuous basis, the start dates are individual and there are no yearly cohorts. When grouped into calendar year with regard to when the one year follow up was completed, the breakdown is as follow: Year 1 (2012): 2 (3%), Year 2 (2013): 10 (14%), Year 3 (2014): 15 (21%), Year 4 (2015): 22 (31%), Year 5 (2016): 18 (25%), Year 6 (2017): 5 (7%).

For the psychosocial measures, paired t-tests were calculated to test for improvements between baseline and 6 month follow up as well as between baseline and 12 month follow up (Table 2). All indices from the physical activity scale were highly skewed and could not be normalised by transformation, as a result non-parametric tests were conducted to examine differences between baseline and both 6 and 12 month follow up (Table 3) As there was a difference in the number of participants for whom data was available at the 6 month and 12 month follow up, the baseline values differ for the two follow up comparisons.

Table 2. Results for psychosocial measures at 6 month and 12 month follow up (t-tests).

Psychosocial Measures	6 Month Follow up				12 Month Follow up			
	Baseline Mean (SD)	6 month follow up Mean (SD)	N	t-values	Baseline Mean (SD)	12 month follow up Mean (SD)	N	t-value
Quality of Life (Total score)	75.88 (18.58)	80.64 (17.01)	72	2.928**	80.40 (15.59)	83.47 (16.60)	32	1.506
Self-esteem (Total score)	16.71 (6.13)	18.24 (6.22)	72	2.587*	17.75 (5.42)	18.78 (5.30)	32	1.152

Paired t-tests: * $p \leq .05$; ** $p \leq .01$

Table 3. Results for the physical activity data at 6 month and 12 month follow up (Wilcoxon Signed Rank Test).

Physical Activity Scale Wilcoxon Rank Test	6 Month Follow up						12 Month Follow up					
	Baseline		6 month follow up		N	z-values	Baseline		12 month follow up		N	z-values
	Mean (SD)	Mean Rank	Mean (SD)	Mean Rank			Mean (SD)	Mean Rank	Mean (SD)	Mean Rank		
Vigorous activity (min/week)	102.98 (184.52)	25.92	196.85 (167.71)	29.20	62	-3.982**	117.26 (220.07)	9.50	248.23 (317.39)	15.02	31	-3.404**
Moderate activity (min/week)	78.13 (201.02)	19.83	149.00 (352.63)	25.86	64	-2.007*	87.74 (266.43)	9.81	209.61 (366.18)	15.14	31	-2.466*
Walking (min/week)	232.32 (343.71)	28.40	250.15 (341.13)	30.33	65	-1.127	258.11 (459.04)	11.65	355.89 (430.69)	13.90	28	-1.238
Sitting (hours/week)	5.53 (3.50)	29.63	5.31 (3.24)	27.57	67	-.439	4.45 (2.68)	13.50	3.81 (1.89)	9.50	29	-.718

Wilcoxon Signed Rank Test: * $p \leq .05$; ** $p \leq .01$

Over the first six months in the project, highly significant improvements in Quality of Life, and vigorous activity, as well as significant improvements in moderate activity and self-esteem could be observed in the participants for whom data was available. At 12 month follow up, the increases in vigorous and moderate activity were maintained. While results for Quality of Life and Self-esteem did not reach significance, means were above those seen at 6 months in this considerably reduced sample. Interestingly, there were no significant changes with regard the more sedentary measures such as “minutes spent walking per week” and “hours spent sitting per week”.

4. DISCUSSION

The main finding of clinical significance is that, perhaps unsurprisingly, participants in the intervention showed a highly significant increase in their activity levels. Levels of both vigorous and moderate activity nearly doubled over the first six months and appeared maintained at 12 months. Given this a population with significant physical health challenges, particularly for cardiovascular conditions, this is a very encouraging finding. Regular exercise is strongly encouraged by most, if not all, UK mental health bodies including the Royal College of Psychiatry [16] and MIND [17] though it is known that motivating and sustaining behaviour change in this arena is highly challenging.

As important, though more modest, are the improvements to self-esteem and quality of life at the 6 month follow up. The results of this study are in line with other quantitative evaluation football interventions on confidence [18, 19] and general well-being [20]. Furthermore, these findings seem to be in concordance with outcomes of qualitative studies that show a positive impact on self-esteem and well-being including one study of Coping Through Football itself [21]. Nevertheless, as for physical activity changes, it remains to be seen whether such improvements would be sustained after participants leave the project.

The main limitations of this entirely naturalistic study based on routine clinical data are the relatively limited sample size especially when compared to the total number of project participants, and the absence of any control data. Data loss and difficulty to obtain follow up data on a regular basis is a ubiquitous issue for such interventions due to logistical problems [22, 23]. However, it is encouraging that, in simple demographic terms at least, the sample was representative of those attending the project as a whole. As is the case for almost all outcome studies of ‘real world’ clinical practice in rehabilitation [22] the lack of a control condition limits conclusions as to causal relationships, and even effect sizes should be approached very cautiously [22] hence their absence here: It is not possible to ascribe change specifically to the intervention as many other factors may be at play such as on-going treatment by statutory services.

Overall both the project and those in the present sample have a high rate of psychotic disorder or other severe mental health problem, and all are in receipt of secondary mental health services. The majority have been referred by acute or community mental health teams, but encouragingly referrers also include a range of social and primary care sources outside of statutory mental health. One of the main challenges for secondary mental health services in the local context is engagement with younger male service users, and specifically those from an ethnic minority background – a demographic that is very well represented in both the overall programme, and those evaluated here.

CONCLUSION

The findings of the present study suggest that a football project like Coping Through Football might be able to increase mental well-being and physical activity - these outcomes are well aligned with findings from evaluation studies looking into the effectiveness of other football projects [11]. As most of the previous studies mainly used qualitative methods, the present findings are helpful in ‘triangulating’ the empirical evidence found in these qualitative studies. The effectiveness of football schemes seems worthy of further evaluation if empirical evidence leads to recognition and funding necessary to make interventions available on a wider scale. Study of the ‘essential’ ingredients and mechanisms of change is crucial to optimise interventions though without losing sight of their individual character and local context. In particular the fact that ethnic minorities seem to benefit from the intervention to the same degree as other participants makes these interventions an interesting tool for reaching out to so called “hard to reach” groups and to foster inclusion. The results evidence a general improvement in physical activity that goes beyond what can be accounted for by attendance alone as the additional minutes of activity far exceed what would be feasible by attending CTF alone. With a background of a mass participation sport in the UK and many other countries, football bodies (professional clubs, associations and federations) are increasingly playing a role in tackling obesity, child health and other public health issues: it is imperative that mental health is not left out as has been all too often the case and evidence is key to that progress.

AUTHORS CONTRIBUTIONS

Bettina Friedrich – organized data, analyzed data, wrote paper.

Oliver John Mason – research design, research supervision, wrote paper.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from Integrated research application system (IRAS ID 207280).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2008 (<http://www.wma.net/en/20activities/10ethics/10helsinki/>).

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTEREST

Evaluation of the project is funded by the Public Health Practice Evaluation Scheme (project no. 534088) School for Public Health Research, National Institute for Health Research, UK.

The authors declare no conflict of interest, financial or otherwise.

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