Combining supervised exercise and physical activity counselling might increase retention to GP Exercise Referral Programmes

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Abstract

Background. Evidence for the effectiveness of GP Exercise Referral is weak (1, 2). We examined traditional supervised exercise (TRAD), physical activity counselling (PAC), combined TRAD/PAC (CMB) and wait-list controls (CON) in a community exercise referral programme in South-East London, UK.

Methods. PPs (n=141) were identified by their doctors as overweight and at increased risk of Type 2 Diabetes. PPs were randomly assigned to treatment. Measures were blood pressure and body composition at baseline and 12 weeks.

Results. One-way ANOVA of absolute change in dependant variables between treatments indicated that body fat mass, body fat percentage and systolic blood pressure were reduced at 12 weeks for all groups including CONT. No statistically significant between-group effects were observed. Paired sample t-tests indicated that lean mass was significantly increased at 12 weeks for all groups including CON; diastolic blood pressure was significantly decreased for all groups at 12 weeks except PAC. Retention was highest to CMB (75%), followed by CON (68%), with PAC and TRAD both at 55%.

Conclusions. Treatment groups and CON appeared to benefit from the programme, with likely measurement effects partially explaining improvement in CON. High retention to CMB is of significance to future GP Referral programmes.

Introduction

General Practitioner (GP) Exercise Referral is the referral of a patient to a period of planned and supervised exercise. The underlying principle of GP Exercise Referral is to increase an individual's physical activity levels on the basis that physical activity has a range of positive health benefits. Given its relatively low cost and potentially broad positive effects, it was anticipated by many in public health that GP Exercise Referral would represent an effective tool in the fight against behaviourally mediated and non-communicable disease.

However, the effectiveness of GP Exercise Referral has not been consistently demonstrated [1, 2]. A recent meta-analysis questioned the usefulness of GP Exercise Referral, reporting mean adherence rates of only 49% in randomised controlled trials and 43% in observational studies [2]. Likewise, the UK National Institute for Health and Care Excellence (NICE) highlighted a lack of evidence for the treatment effectiveness of GP Exercise Referral [3] and made a number of recommendations for future research.

The aim of the present study was to address several of the recommendations made by NICE, and to further investigate the degree to which the undoubted efficacy of exercise as a public health tool translates into real world effectiveness [1]. We studied a traditional GP Exercise Referral programme (TRAD), a novel GP Exercise Referral programme built around physical activity counselling (PAC), a combined programme of TRAD and PAC (CMB), and a wait-list control (CON) in a community exercise referral programme in South-East London, UK.

Methods

Participants (n=141) were residents of South-East London, UK. Letters sent by the research team to all GPs in the region invited them to identify and contact potential participants, who had to be overweight and/or obese (BMI 25–35), and/or at increased risk of Type 2 Diabetes. Those taking prescribed medication for one or more of these conditions were excluded from the study, but were referred into the non-research arm of the GP Exercise Referral programme.

Participants were randomly assigned to treatment which took place over 12 weeks. TRAD received one session per week of a standard supervised exercise intervention already delivered as part of the care pathway of the local health trust. PAC received one session per week of PAC structured around the model proposed by Haase et al. [4] CMB received a combination of PAC (six sessions in weeks 1, 3, 5, 7, 9 & 11) and TRAD (six sessions in weeks 2, 4, 6, 8, 10 & 12). A wait-list control condition consisted of a legitimate 12-week waiting list. All participants including controls received a treatment. The type and intensity of exercise varied per individual in TRAD and CMB. Measures were blood pressure and body composition at baseline and 12 weeks.

Results

One-way ANOVA of absolute change in dependant variables between treatments indicated that body fat mass, body fat percentage and systolic blood pressure were reduced at 12 weeks for all groups including CON. No statistically significant between-group effects were observed.

Paired sample t-tests (Table 1) indicated that for the PAC group body fat mass significantly decreased (p= .02), as well as Systolic Blood Pressure (p= .01). Diastolic blood pressure significantly decreased in the CMB group.

Additionally, lean mass was increased at 12 weeks for all groups including CON; body fat mass, body fat percentage, and systolic blood pressure decreased for all groups at 12 weeks; diastolic blood pressure decreased for all groups at 12 weeks except PAC. Retention was highest to CMB (75%), followed by CON (68%), with PAC and TRAD both at 55% (Table 2).

Table 1. Paired samples t-test comparing dependant variables at baseline and 12 weeks

Dependant variable	Group	Baseline		12 Weeks		t	df	Sig
		M	SD	M	SD			
Body Fat Mass (kg)	TRAD	31.5	14.2	30.2	14.2	1.82	20	0.08
	CMB	37.0	15.8	36.7	15.3	0.34	26	0.74
	PAC	33.4	11.2	32.2	10.7	2.49	18	0.02*
	CON	31.8	11.9	31.3	12.0	1.36	44	0.18
Body Fat percentage (%)	TRAD	36.4	12.2	35.8	11.8	1.23	19	0.23
	CMB	37.8	9.4	36.9	8.7	1.64	25	0.11
	PAC	38.8	9.1	38.6	8.9	0.38	20	0.70
	CON	36.5	8.8	36.0	9.4	1.12	45	0.27
Lean Body Mass (kg)	TRAD	55.6	12.1	56.2	12.1	-1.15	18	0.27
	CMB	61.3	13.5	61.5	12.7	-0.36	24	0.72
	PAC	48.3	9.7	49.4	9.7	-2.03	18	0.06
	CON	54.7	13.4	54.8	13.2	-0.40	46	0.69
Systolic Blood Pressure (mmHg)	TRAD	128.2	19.0	126.7	15.2	0.67	26	0.51
	CMB	132.4	14.9	130.2	13.9	1.00	38	0.33
	PAC	132.3	19.7	124.2	18.2	2.80	21	0.01*
	CON	129.0	18.2	127.0	18.1	1.22	52	0.23
Diastolic Blood Pressure (mmHg)	TRAD	78.4	10.50	75.4	10.8	1.96	27	0.06
	CMB	81.9	8.6	79.4	8.6	2.20	37	0.03*
	PAC	76.3	9.1	76.5	10.1	-0.16	22	0.87
	CON	78.2	10.1	76.9	10.5	1.14	51	0.26

* Denotes statistically significant difference P<0.05

Table 2. Retention to treatment

Dependant variable	TRAD	CMB	PAC	CON
n = at baseline	55	52	42	80
n = at 12 weeks	30	39	23	54
Retention (%)	55%	75%	55%	68%

Summary and Conclusion

Treatment groups and CON appeared to benefit from the programme, with likely measurement effects partially explaining improvement in CON. Findings of the present study suggest that combining (CMB) traditional (TRAD) supervised exercise and physical activity counselling (PAC) shows greater potential than either treatment in isolation. This is perhaps especially the case given that retention to the combined treatment was highest over the 12-week intervention. These data could be of significance to future GP Referral programmes and warrant replication on a larger sample.

References

[1] Beedie C, Mann S, Jimenez A et al. Death by Effectiveness: Exercise as Medicine Caught in the Efficacy Trap! British Journal of Sports Medicine. Published Online First: 12 Feb 2015. doi:10.1136/bjsports-2014-094389

[2] Pavey T, Taylor A, Hillsdon M et al. Levels and predictors of exercise referral scheme uptake and adherence: a systematic review. J Epidemiol Community Health. 2012;66(8):737–44.

[3] Physical activity exercise referral schemes. National Institute for Health and Care Excellence. Available from: https://www.nice.org.uk/guidance/ph54.

[4] Haase A, Taylor, A., Fox, K., Thorp, K., Lewis, G. Rationale and development of the physical activity counselling intervention for a pragmatic Trial of Exercise and Depression in the UK (TREAD-UK). Mental Health and Physical Activity. 2010;3(2):85–91.

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The ukactive Research Institute holds a unique partnership between academia and industry to turn the tide of physical inactivity. It co-ordinates and delivers research designed to improve the use of physical activity in everyday life. Established in 2010, the ukactive Research Institute seeks to answer 'how can we get more people, more active, more often'?

The Research Institute aims to bridge the evidence gap between traditional laboratory based 'exercise is medicine' research and real world interventions. This is achieved by conducting research assessing the effectiveness of interventions on directly measured physical activity levels, clinically relevant markers of cardiovascular and metabolic health, and other core variables in real world interventions.

These questions will in time relate as much too economic, social and political factors as to scientific and health factors. Each project undertaken will, when completed, be publishable in a peer-reviewed journal article, constitute the basis of a major policy report/insight document, or produce otherwise strategically relevant data.

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