Supplementary File 1: Description of the Well London intervention

Delivery of the *Well London* programme was coordinated by the London Health Commission(at the Greater London Authority) and conducted in partnership by: London Sustainability Exchange (LSx), Groundwork London, Central YMCA, Arts Council England, South London and Maudsley NHS Mental Health Trust (SLaM), and the University of East London.

Each of these delivery partners led a key theme of the programme (themes outlined below) and also coordinated delivery of projects by the other partners in three to four of the target neighbourhoods. This local delivery was organised in collaboration with a local co-hosting statutory or voluntary sector organisation with knowledge about, and experience of working with, the community in that specific area.

The main aims of the *Well London* programme were to:

- Improve mental wellbeing by increasing user-involvement in the design and running of projects, developing preventative approaches for common mental health problems, tackle stigma to change community perspectives of mental health and positively promote mental health;
- Increase levels of physical activity by focussing on the most sedentary individuals, promoting incorporation of physical activity into daily routines and improving the ability of communities to organise and run activities that provide opportunities to take part in physical activity;
- Increase levels of healthy eating by increasing access to healthy foods and increasing knowledge of healthy foods and improving food skills.

The Well London programme was comprised of five main components:

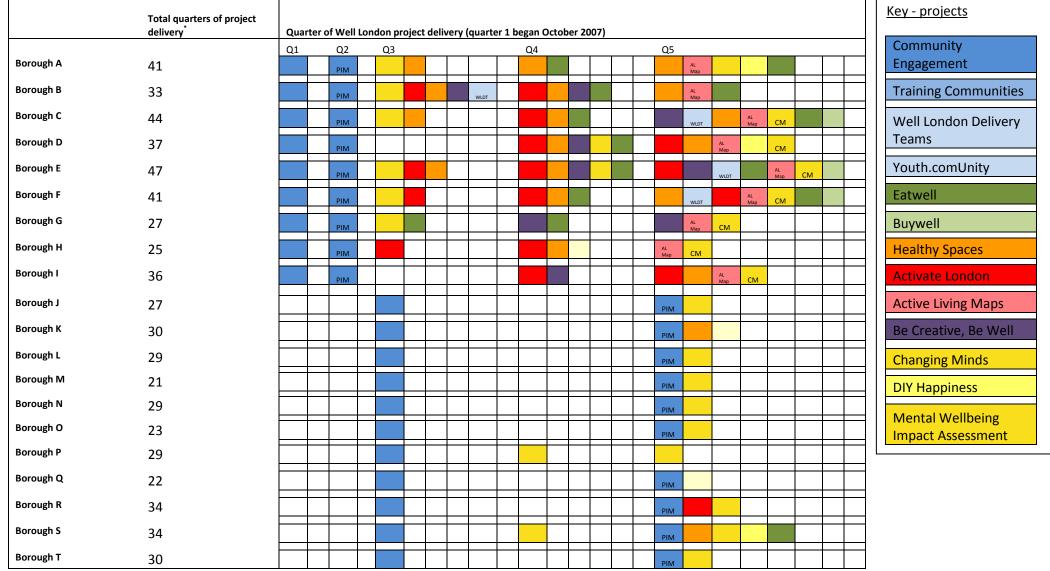
- An extensive community consultation and engagement process at the beginning of the intervention (including using World Cafe methodology[25] to identify the needs of the communities living in the target neighbourhoods and separate Appreciative Inquiry Workshops[26] to design a suite of projects specific to the needs of each community);
- Ongoing community engagement and community-led assessment of the Well London activities, throughout the intervention;

- Heart of the Community Projects were the core of the community engagement approach; they developed links within the communities to increase participation in, and access to, *Well London* activities and provided training, volunteering and employment opportunities to residents;
- Themed projects focussing on: culture and tradition; healthy eating; mental health and wellbeing; physical activity; or open spaces;
- The Well London Legacy, to encourage sustainability and maintenance of activities beyond the end of the intervention funding.

Table S1: Description of the Well London projects

Project title	Project description	Delivery lead
Heart of the Communit	ty Projects	
CADBE	Consultation, assessment, design, brokerage, enterprise - includes community cafe needs assessments and appreciative inquiry workshops for design of suite of intervention projects that comprised the initial community engagement activities	University of East London
Training Communities	Training on a variety of topics to support delivery of the other <i>Well London</i> projects by residents in the LSOAs e.g. Facilitation, community engagement	South London and Maudesely NHS Mental Health Trust
<i>Well London</i> Delivery Teams	Training for local volunteers in each LSOA to act in a similar role to NHS Health Trainers - to support people to develop healthier lifestyles through signposting to increase uptake of local services and peer support; the delivery team also act as advocates in interactions with local service providers	London Sustainability Exchange & Central YMCA
Youth.comUnity	Engaging young people to be actively involved in decision-making in their local community and in transforming the community to improve health and wellbeing - youth ambassadors were recruited and trained in each LSOA	Central YMCA
Wellnet	Well London learning network for communities and professionals in London to share practice ideas and experience of delivering community-led interventions for improving health and wellbeing - it is not limited to delivery partners or areas involved in Well London	London Sustainability Exchange
Active Living Maps	Maps of facilities and opportunities for healthy activities/lifestyle e.g. Maps show sports facilities, parks, allotments - made for each LSOA and delivered in paper format to all residents	Groundwork London
Themed projects		
Eatwell	Healthy cooking classes (Cook and Eat) and Community Feasts to provide engaging education about healthy eating and good nutrition	London Sustainability Exchange
Buywell	Working with local retail outlets and with local community members to improve access to affordable healthy food that is sustainably produced	London Sustainability Exchange

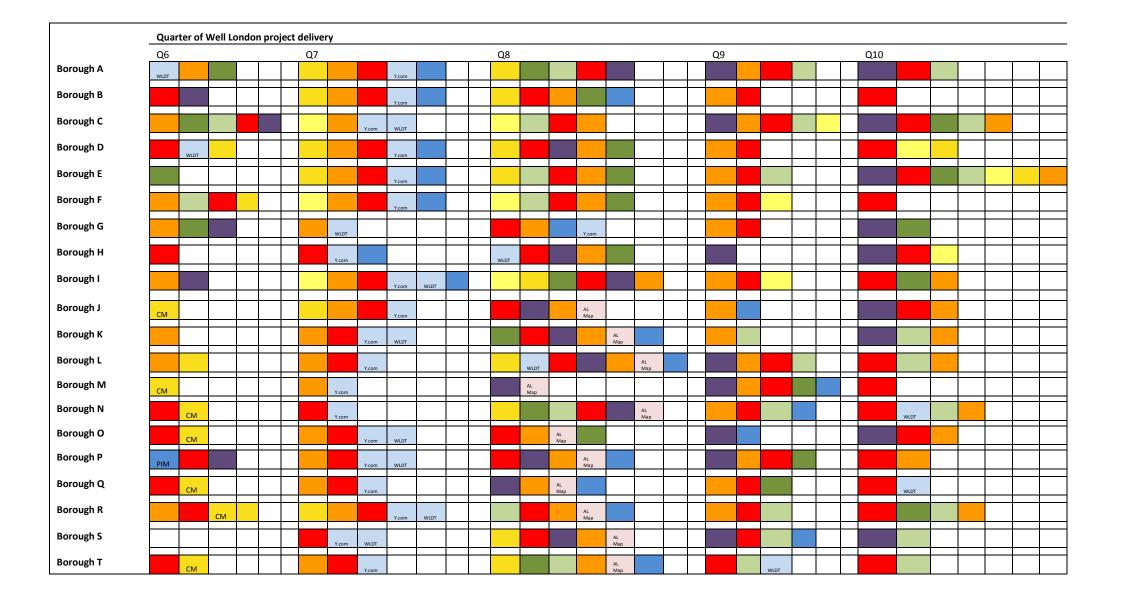
Project title	Project description	Delivery lead
Activate London	Range of activities for both young people and adults to engage in physical activity; this involves one or more of: signposting to existing local facilities and activities, capacity building by providing training to residents to run physical activity sessions in the LSOA, or direct delivery of e.g. taster sessions and courses and joint initiatives with residents and other providers	Central YMCA
Be Creative, Be Well	Arts activities are used to engage residents in the LSOAs in a process of change to improve, health, wellbeing, community cohesion and the environment; uses intercultural and intergenerational approaches	Arts Council England
Changing Minds	Recruits and trains local residents who have direct experience of mental ill health to deliver awareness training in the LSOAs to reduce stigma and discrimination	South London and Maudesely NHS Menta Health Trust
DIY Happiness	Uses humour, creativity and positive psychology approaches to increase psychological resilience; workshops of 8 participants, targeted at women	South London and Maudesely NHS Menta Health Trust
Healthy Spaces	Improve physical environments through development of community gardens and allotments and re- development of greenspaces and greenery	Groundwork London
Mental Wellbeing Impact Assessment	Local residents are trained to understand, assess and demonstrate the impact of projects, activities and organisations in the LSOA on mental wellbeing	South London and Maudesely NHS Menta Health Trust

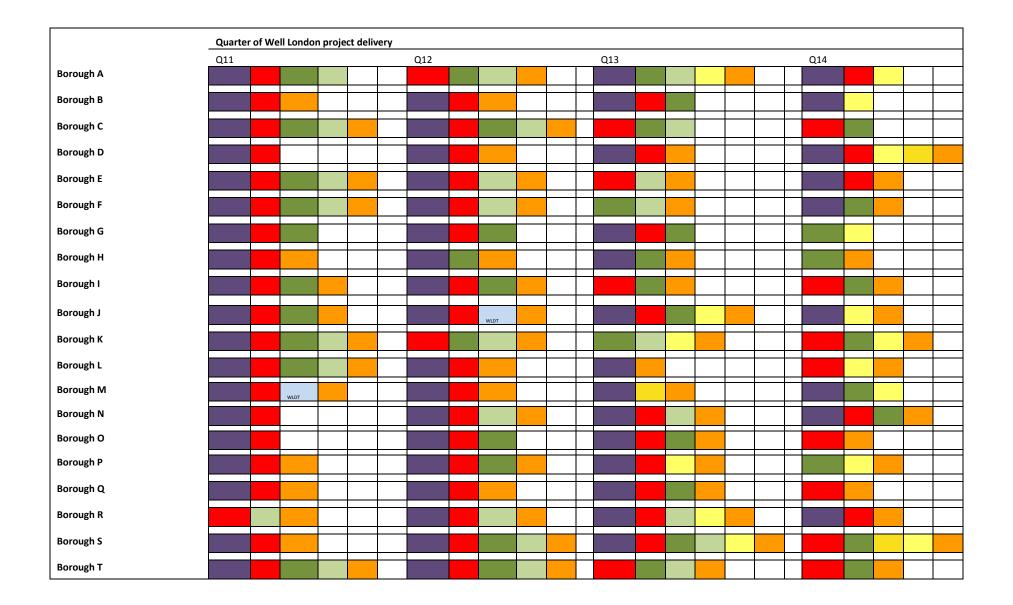


Supplementary File 2: Summary of project delivery for Well London. Each square represents reported activity (one or more sessions) in each project.

The Well London Delivery Team and Youth.comUnity squares show when the volunteer teams for adults and young people were first active in each borough. CM is Changing Minds; PIM is project initiation meeting.

* Total quarters of project delivery = the total number of coloured squares excluding the community engagement activities, Well London Delivery Teams, Youth.comUnity and Active Living Maps that were delivered in every borough.





Outcome type	Outcome	Indicator	Measurement tool	Data collection	Baseline adjustment variable
Primary	Healthy eating	Binary – consumption of 5 or more portions of fruit and vegetables per day ("five-a-day")	Food frequency questionnaire adapted from the Health Survey for England	Adult household survey	Proportion meeting five-a-day
Primary	Healthy physical activity	Binary – doing five or more sessions of moderate intensity physical activity per week lasting at least 30	International Physical Activity Questionnaire	Adult household survey	Proportion meeting five-a-week
Primary	Mental health – negative	mins ("five-a-week" Binary – score above threshold for normal mental health	12 item General Health Questionnaire	Adult household survey	Hope Scale score[42]; proportion reporting feeling anxious/depressed in Euroqol 5D[43]; proportion consulting general practitioner for mental health problems in previous 12 months.
Primary	Mental health – positive wellbeing	Continuous - score	Warwick-Edinburgh Mental Wellbeing Scale	Adult household survey	Hope Scale score[42]; proportion reporting feeling anxious/depressed in Euroqol 5D[43]; proportion consulting general practitioner for mental health problems in previous 12 months.
Secondary	Unhealthy eating	Continuous – score comprised of mean Likert scale points for frequency of consumption of: fried foods; savoury snacks (crisps, salted nuts); cakes and puddings; sweets and chocolates; sugar sweetened soft drinks	Food frequency questionnaire adapted from the Health Survey for England Scale points: 6 or more times per week (5) 3-5 times per week(4) 1-2 times per week(3) Less than once a week(2) Rarely or never(1)	Adult household survey	Mean frequency of eating takeaway foods
Secondary	Healthy eating	Continuous – number of portions of fruit and vegetables per day	Food frequency questionnaire adapted from the Health Survey for England[31]	Adult household survey	Mean portions of fruit and vegetables per day
Secondary	Healthy physical activity	Binary – doing 60 minutes of moderate intensity	International Physical Activity Questionnaire	Adult household	Proportion doing 60 minutes of activity per day

Supplementary File 3: Description of primary and secondary outcome variables

Outcome type	Outcome	Indicator	Measurement tool	Data collection	Baseline adjustment variable
		physical activity per day		survey	
Secondary	Healthy physical activity	Binary – doing 150 minutes of moderate intensity physical activity per week	International Physical Activity Questionnaire	Adult household survey	Proportion doing 150 minutes of moderate activity per week
Secondary	Healthy physical activity	Continuous – MET-minutes of activity per week	International Physical Activity Questionnaire	Adult household survey	Mean MET-minutes per week
Secondary	Mental health – negative	Continuous – GHQ12 score	12 item General Health Questionnaire	Adult household survey	Hope Scale score[42]; proportion reporting feeling anxious/depressed in Euroqol 5D[43]; proportion consulting general practitioner for mental health problems in previous 12 months.
Secondary	Social networks: Contact with friends and neighbours	Score indicating relative frequency of contact with friends and neighbours (possible range 0-112)	ONS social capital harmonised question set	Adult household survey	N/A
Secondary	Social support: Help available for practical, financial and emotional problems	Score indicating number of people who would provide support with practical or financial or emotional problems (possible range 0-6)	ONS social capital harmonised question set	Adult household survey	N/A
Secondary	Social integration and trust: Residents' perceptions that neighbours of different backgrounds get along and that neighbours can be trusted	Binary outcomes indicating whether respondents perceive that: - Most people in their neighbourhood can be trusted - People from different backgrounds in the neighbourhood "get on well" - Racial harassment is a problem in the neighbourhood	ONS social capital harmonised question set	Adult household survey	N/A
Secondary	Collective efficacy and reciprocity: Residents' perceptions that neighbours help each other and work together to improve the neighbourhood	Binary outcomes indicating whether respondents perceive that: - People in the neighbourhood pull together to improve it - People in the neighbourhood help each other	ONS social capital harmonised question set; Citizenship Survey (England)	Adult household survey	N/A

Outcome type	Outcome	Indicator	Measurement tool	Data collection	Baseline adjustment variable
Secondary	Civic participation: Participation in volunteering activities; involvement in activism on local issues	Binary outcomes indicating involvement in: - Volunteering in the last 12 months - Action to solve a problem affecting the local area/community in the last 12 months	ONS social capital harmonised question set	Adult household survey	N/A
Secondary	Antisocial behaviour: Reported by residents	Score indicating the number of issues that respondents perceive to be a problem in the local area: - Public drinking/drunkenness - Litter - Graffiti and vandalism - Drug dealing - Teenage gangs - "Troublesome" neighbours (possible range 0-6)	ONS social capital harmonised question set	Adult household survey	N/A
Secondary	Antisocial behaviour: Coverage across the LSOA of signs of antisocial behaviour and incivilities recorded by fieldworkers completing the environmental audit	Score indicating the intensity of signs of incivilities: Litter/broken glass; graffiti; broken/vandalised facilities; broken windows; unattended dogs; large items dumped in public areas; dog foul; needles/syringes/condoms; empty alcohol cans/bottles; sex paraphernalia (condoms, cars) (possible range 0-100)	-	Neighbourhood environmental audit	Incivilities score
Secondary	Fear of crime: Residents' perceptions of neighbourhood safety	Binary outcomes indicating whether respondents feel safe in their neighbourhood: - During the day - At night	SHARP study	Adult household survey	N/A
Secondary	Occurrence of crimes: Annual rate per capita of Police- reported crimes (criminal damage; violence against the person; drugs; robbery & burglary)	Rate of: - Any crimes - Individual crime categories	-	London Metropolitan Police	Crime rate

Abbreviations: GHQ-12, 12-item General Health Questionnaire; MET-minutes, metabolic equivalent time in minutes; SHARP, Scotland's Housing and Regeneration Project (2002-2008)[32]

Social / Community Process	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
Social networks	Contact with friends and neighbours	How often do you: i. Meet up with friends ii. Speak to friends on the phone iii. Write to friends iv. Speak to neighbours	Most days; once a week or more; once or twice a month; less often than once a month; never; don't know	Adult household survey	Score the responses to indicate approximate number of days per month Most days=28 Once a week or more=12 Once or twice a month=2 Less often than once a month=0.5 Never=0 Don't know = treat as missing Sum the scores across the domains to give a total relative frequency of social contact events

Supplementary File 4: Questionnaire items used to measure social and community processes and outcome measures for the analysis

Social / Community Process	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
Social support	Help provided	 How many people outside your home could you ask for the following kinds of help: i. Buy groceries if you are unwell ii. Lend you money for a few days iii. Give advice and support in a crisis 	None; one or two; more than two; would not ask;	Adult household survey	Score the responses: None=0 One or two = 1 More than two=2 Would not ask = 0 Don't know=missing Prefers not to say = missing
					Sum scores across questions to give a social support score with range 0-6
Social integration and trust	Residents' perceptions of neighbour interaction	 Would you say that: a. Most of the people in your neighbourhood can be trusted b. Some can be trusted c. A few can be trusted d. No-one can be trusted e. Just moved here f. Don't know g. Prefers not to say 		Adult household survey	Separate binary outcomes: Trust = most or some can be trusted vs. other responses

Social / Community Process	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
		To what extent do you agree or disagree that this neighbourhood is a place where people from different backgrounds get on well together?	Definitely agree; tend to agree; tend to disagree; definitely disagree; don't know; too few people in the neighbourhood; all same background		Different backgrounds get on = definitely or tend to agree vs. other responses
		How much of a problem is people being attacked or harassed because of their skin colour, ethnic origin or religion?	Very big problem; fairly big problem; not a very big problem; it happens but it's not a problem; not a problem at all; don't know		Racial harassment = very or fairly big problem vs. other responses
Collective efficacy	Residents' perceptions of neighbours mutual help and working together	To what extent do you agree or disagree that people in this neighbourhood pull together to improve the neighbourhood?	Definitely agree; tend to agree; tend to disagree; definitely disagree; don't know; nothing needs improving	Adult household survey	Separate binary outcomes: People pull together = definitely or tend to agree vs. other responses
		Is this a neighbourhood in which people do things together and try to help each other, or one in which people mostly go their own way?	Help each other; go own way; mixture; don't know		Help each other = health each other vs. other responses

Social / Community Process	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
Civic participation	Involvement in volunteering activities; involvement in activism on local issues	During the last 12 months have you given any unpaid help to any groups, clubs or organisations in any of these ways?	Raising or handling money/taking part in a sponsored event; leading the group/member of a committee; organising or helping run an activity or event; visiting people; befriending or mentoring people; giving advice/information/counselling; secretarial/admin/clerical work; providing transport/driving; representing; campaigning; other practical help; any other help; none of the above	Adult household survey	Binary: Involvement in any activity vs. no involvement

Social / Community	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
Process					
		In the last 12 months have you	Contacted a local radio/television		Binary: Taken any action vs.
		taken any of the following actions	station or newspaper; contacted		no action
		in an attempt to solve a problem	the appropriate organisation such		
		affecting people in your local area?	as the council; contacted a local		
			councillor or MP; attended a		
			public meeting or neighbourhood		
			forum to discuss local issues;		
			attended a tenants' or local		
			residents' group; attended a		
			protest meeting or joined an		
			action group; helped organise a		
			petition on a local issue; no local		
			problems; none of these; don't		
			know; none of the above		
Antisocial	Residents'	I am going to read out a list of	Very big problem; fairly big	Adult household	Binary indicator for each
behaviour	perceptions of	problems which some people face	problem; not a very big problem;	survey	question:
	antisocial	in their neighbourhood. For each	it happens but it's not a problem;		
	behaviour	one, please can you tell me how much of a problem it is:	not a problem at all; don't know		Very or fairly big problem vs.
					other responses
		How much of a problem are people			Sum binary scores across the
		being drunk or rowdy in public			questions to give a perceived
		places?			antisocial behaviour score
		How much of a problem is rubbish or litter lying around?			ranging between 0 and 6

Social / Community	Indicator	Questionnaire items	Response structure	Data collection	Outcome measure
Process					
		 How much of a problem are vandalism, graffiti and other deliberate damage to property or vehicles? How much of a problem are people using or dealing drugs? How much of a problem are teenagers hanging around on the street? How much of a problem are traublesome paigbbours? 			
Antisocial behaviour	Signs of antisocial behaviour observed by field workers	troublesome neighbours? When you walked around this segment did you see: Litter of broken glass Graffiti Broken or vandalised facilities Broken windows Unattended dogs Large items dumped in public areas (furniture/cars) Dog foul Needles, syringes or condoms Empty beer cans or alcohol bottles Sex paraphernalia (condoms, cards)	None; little; moderate amount; a lot	Neighbourhood environmental audit	Score none=0, little=1, moderate=2, a lot=3 Calculate the mean score for each domain (i.e. litter, graffiti etc.) across the surveyed segments in the LSOA. Sum the domain mean scores for the LSOA and standardise to range between 0 and 100

ndicator	Questionnaire items	Response structure	Data collection	Outcome measure
Residents'	How safe do you feel generally	Very safe; fairly safe; a bit unsafe;	Adult household	Separate binary outcomes:
perceptions of	when you are walking outside alone in this neighbourhood during	very unsafe; never out alone	survey	Very or fairly safe vs. other
d safety	the daytime?			responses
	How safe do you feel when you are walking outside in this neighbourhood alone after dark?			
R p n	esidents' erceptions of eighbourhoo	esidents' erceptions of eighbourhoo safety How safe do you feel generally when you are walking outside alone in this neighbourhood during the daytime? How safe do you feel when you are walking outside in this	esidents' How safe do you feel generally Very safe; fairly safe; a bit unsafe; when you are walking outside alone in this neighbourhood during the daytime? How safe do you feel when you are walking outside in this	esidents' How safe do you feel generally Very safe; fairly safe; a bit unsafe; Adult household very unsafe; never out alone survey alone in this neighbourhood during the daytime? How safe do you feel when you are walking outside in this

Supplementary File 5: Adult household survey

Adults were interviewed in their homes by trained fieldworkers. Households were selected at random from the Post Office Address File for each of the 20 intervention and 20 control LSOAs, which contains a record for each Post Office delivery point. The addresses were assigned a number and a random number generator was used to select 150 addresses for the fieldworkers to visit. Each of the 150 addresses was visited on 5 separate days, at varying times of the day, before being classified as a non-responding address. At responding addresses, every eligible, consenting adult (aged 16 years and older) was interviewed independently. The target sample for each LSOA was 100 interviews. Further addresses were selected at random if 100 interviews had not been completed after visiting each of the 150 initial addresses five times. Where business addresses were selected at random from the sample and a replacement selected at random from the sampling frame. Written, informed consent was obtained from all participants.

The structured adult questionnaire was administered using computer-assisted personal interviewing, where the fieldworkers asked the survey respondents the questions and recorded the answers on an electronic version of the questionnaire on a small laptop computer. The data were synchronised to the survey database daily. Use of computer-assisted interviewing improved data quality compared to the baseline paper survey, because automatic checks for missing and inconsistent values were built-in to the questionnaire. The survey collected the primary and secondary health outcomes, a range of secondary social outcomes, information on general health and other health behaviours, sociodemographic characteristics, awareness off and participation in the *Well London* programme and other similar community activities. All data were collected in both the intervention and control neighbourhoods, although additional, more detailed questions on intervention participation were asked in the intervention neighbourhoods. The domains covered in the questionnaire are presented in more detail below. A copy of the questionnaire is available from the authors on request.

Domains collected	Questions
Healthy physical activity	International Physical Activity Questionnaire[1] Intention to do more physical activity and perceived barriers
Healthy/unhealthy eating	Food frequency questionnaire for fruit and vegetables adapted from Health Survey for England[2] Intention to eat more healthily and perceived barriers
Mental wellbeing	12-item General Health Questionnaire[3] Warwick Edinburgh Mental Wellbeing Scale[4, 5] The Hope Scale[6]
Social networks and support	Questions from the Office for National Statistics Social Capital Harmonised Question Set[7, 8], the SHARP ¹ study[9], British Household Panel Survey and the Citizenship Survey (England): - Social networks: frequency of seeing/speaking to relatives/friends/neighbours - Social support: number of people who would provide practical, financial, emotional help/support
Neighbourhood characteristics	 Questions from the Office for National Statistics Social Capital Harmonised Question Set[7, 8], the SHARP study[9], British Household Panel Survey and the Citizenship Survey (England): Satisfaction with the neighbourhood environment (general, environment, buildings, noise, parks, children's play areas) Neighbourhood problems (drunkenness in public places; rubbish and litter; vandalism and graffiti; drug dealing; racially motivated crime and harassment; teenage gangs; troublesome neighbours) Community cohesion (neighbours helping one another; neighbours from different backgrounds getting along; neighbours working together to improve the area; trust) Perceived safety in the neighbourhood during the day and at night
Community and civic participation	Participation in arts and cultural activities – questions from the Taking Part Survey conducted by the Department for Culture Media and Sport. From the ONS Harmonised Question Set on Social Capital: - Taking actions to solve problems in the local area - Volunteering

¹ Scotland's Housing And Regeneration Project (2002-2008)

Domains collected	Questions
	- Perceived influence on decisions in local area
General health	Health related quality of life Euroqol five domain EQ-5D[10-12]; chronic disease diagnoses; GP consultations (general, mental health)
Alcohol and tobacco use	Questions adapted from the Health Survey for England[2]
Anthropometrics	Self-reported height and weight; waist circumference measured with tape measure during interview (self-report if refuse measurement)
Sociodemographics	Age; gender; ethnicity; nationality; marital status; housing tenure and duration of residency; educational attainment; personal and household income; employment status and occupation; household size and relationships; languages spoken; religion
Intervention participation	 Intervention neighbourhoods Awareness of the <i>Well London</i> programme Awareness of specific projects within the programme with list of projects to aid recall and prevent recall bias due to poor brand recognition Participation in the <i>Well London</i> programme Participation in specific projects in the programme with list of projects to aid recall and prevent recall bias due to poor brand recognition Participation in other similar community-based activities during the intervention period Control neighbourhoods Awareness of the <i>Well London</i> programme Participation in the <i>Well London</i> programme Participation in other similar community-based activities during the intervention period

- 1. Craig CL, Marshall AL, Sjostrom M, Bauman AE, Booth ML, Ainsworth BE, Pratt M, Ekelund U, Yngve A, Sallis JF, Oja P: International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc* 2003, 35:1381-1395.
- Unit JHS: Health Survey for England 2009 Volume 2: methods and documentation. In Book Health Survey for England 2009 Volume 2: methods and documentation (Editor ed.^eds.). City: National Centre for Social Research; Department of Epidemiology and Public Health, UCL; 2009.
- 3. Goldberg DP, Gater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, Rutter C: **The validity of two versions of the GHQ in the WHO study of mental illness in general health care.** *Psychol Med* 1997, **27:**191-197.
- 4. Stewart-Brown S, Tennant A, Tennant R, Platt S, Parkinson J, Weich S: 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 Qual Life Outcomes* 2009, **7:**15.
- 5. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S: **The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation.** *Health Qual Life Outcomes* 2007, **5:**63.
- 6. Snyder CR, Harris C, Anderson JR, Holleran SA, Irving LM, Sigmon ST, Yoshinobu L, Gibb J, Langelle C, Harney P: **The will and the ways: development and validation of an individualdifferences measure of hope.** *J Pers Soc Psychol* 1991, **60:**570-585.
- 7. Harper R, Kelly M: **Measuring social capital in the United Kingdom.** In *Book Measuring social capital in the United Kingdom* (Editor ed.^eds.). City; 2003.
- 8. Green H, Fletcher L: Social Capital Harmonised Question Set: A guide to questions for use in the measurement of social capital. In *Book Social Capital Harmonised Question Set: A guide to questions for use in the measurement of social capital* (Editor ed.^eds.). City: Office for National Statistics; 2003.
- 9. Petticrew M, Kearns A, Mason P, Hoy C: **The SHARP study: a quantitative and qualitative evaluation of the short-term outcomes of housing and neighbourhood renewal.** *BMC Public Health* 2009, **9:**415.
- 10. Brooks R: EuroQol: the current state of play. *Health Policy* 1996, **37**:53-72.
- 11. Rabin R, de Charro F: **EQ-5D: a measure of health status from the EuroQol Group.** Ann Med 2001, **33:**337-343.
- 12. Vanagt HME, Essinkbot ML, Krabbe PFM, Bonsel GJ: **Test-Retest Reliability of Health State** Valuations Collected with the Eurogol Questionnaire. *Soc Sci Med* 1994, **39:**1537-1544.

Supplementary File 6: Additional description of statistical methods

Adjusted effect estimates

Estimates were adjusted for age, gender, ethnicity, educational attainment, employment status and neighbourhood-level summaries of the outcomes collected in the baseline survey (Table 1), using the two-stage method described by Hayes and Moulton[37]. A regression model (linear for continuous outcomes, logistic for binary outcomes) was fitted to the individual-level outcomes, including the variables listed above and an indicator for the matched pair (London borough), but no indicator for intervention/control status. The residual differences between the observed mean or log proportion and that expected from the model were subjected to a paired t-test comparing the intervention and control arms.

Area-level effect estimates from the environmental audit and the routine crime data were adjusted for baseline using a cluster-level linear regression.

Subgroup analyses

The adjusted effect of the intervention on the primary health outcomes was estimated within subgroups of age, gender, ethnicity, educational attainment and employment status. Linear regression was used to test for heterogeneous effect of the intervention across subgroups. The cluster residuals described above were regressed on pair (borough), intervention status, the subgroup variable and all two-way interactions between these variables. An F-test was used to test for a significant interaction between the intervention and subgroup variables.

Variable	Percent responses missing (n=3881)
Age	0
Gender	0
Ethnicity	0.4
Employment status	1.9
Educational achievement	1.0
Healthy eating (portions of fruit and vegetables per day)	4.0
Unhealthy eating score	2.6
Physical activity (MET minutes per week)	0.1
Mental health	
Warwick Edinburgh Mental Wellbeing Scale	2.1
Social networks score	2.3
Social support score	1.6
Social integration	
Some or most people in neighbourhood can be trusted	-
People from different backgrounds in the neighbourhood get on	-
Racial harassment is a problem in the neighbourhood	-

Supplementary File 7: Missing data in primary and secondary health outcomes and sociodemographic variables in the *Well London* cluster randomised trial follow-up survey (n=3881)

	People in the neighbourhood pull together to improve it	-
	People in the neighbourhood help each other and do things together	-
	Taken any action to solve problems in the local area in past 12 months	-
Volun	teering – any activity in last 12 months	-
Antiso	ocial behaviourresident perceptionsscore	-
Fear o	f crime	
	Feel safe in the neighbourhood during the day	-
	Feel safe in the neighbourhood at night	-

Supplementary File 8: Subgroup-specific effect estimates for primary health outcomes and test of interaction between subgroup variable and intervention status (Overall P value)

Supplementary Table 1: Age specific effect estimates for health outcomes

	Summar	ry statistics		Effect	estimates		Sa	mple size	Overall
	(mean of continuous variables, prevalence of binary outcomes)		Rate ratio for binary outcomes, mean difference for continuous outcomes					<i>P</i> value	
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Intervention	-
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
Primary health outcomes									
Healthy eating – meeting five-a- day (fruit and vegetable portions) %									1.0
16-24 years	47.4	52.2	1.1	0.5	1.1	0.5	392	412	
	(39.3, 55.6)	(43.2, 61.2)	(0.8, 1.5)		(0.8, 1.5)				
25-34 years	58.5	58.1	1.0	0.9	1.0	1.0	475	466	
	(51.5, 65.5)	(52.3, 64.0)	(0.9, 1.2)		(0.9, 1.2)				
35-44 years	53.3	56.1	1.0	1.0	1.0	1.0	377	401	
	(46.3, 60.3)	(49.1, 63.2)	(0.8, 1.2)		(0.8, 1.2)				
45-54 years	53.0	53.9	1.1	0.6	1.1	0.5	281	256	
	(44.1, 61.9)	(46.4, 61.4)	(0.8, 1.4)		(0.8, 1.4)				

		y statistics			estimates		Sa	Overall <i>P</i>	
	prevalen	inuous variables, ce of binary comes)	Rate ratio foi	Rate ratio for binary outcomes, mean difference for continuous outcomes				value	
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% CI)	P value	Control	Intervention	_
55-64 years	53.6 (43.8, 63.4)	63.6 (53.1, 74.2)	1.1 (0.9, 1.4)	0.4	1.1 (0.9, 1.3)	0.3	153	121	
65+years	53.7 (44.0, 63.5)	52.2. (43.2, 61.3)	1.0 (0.8, 1.4)	0.8	1.1 (0.8, 1.4)	0.7	147	136	
Physical activity – meeting 5x30 mins moderate intensity activity per week %									0.9
16-24 years	74.6 (66.6, 82.5)	75.9 (71.1, 80.7)	1.0 (0.9, 1.2)	0.5	1.0 (0.9, 1.2)	0.6	405	456	
25-34 years	67.2 (59.1, 75.3)	73.0 (66.5, 79.6)	1.1 (0.9, 1.3)	0.5	1.1 (0.9, 1.3)	0.5	488	482	
35-44 years	69.8 (61.4, 78.3)	69.8 (62., 76.8)	1.0 (0.8, 1.2)	0.9	1.0 (0.8, 1.1)	0.5	388	411	
45-54 years	65.5 (55.9, 75.1)	60.9 (51.8, 69.9)	1.0 (0.7, 1.3)	0.8	0.9 (0.7, 1.2)	0.7	287	271	

		y statistics			estimates		Sa	Overall <i>P</i>	
	(mean of continuous variables, prevalence of binary outcomes)		Rate ratio for binary outcomes, mean difference for continuous outcomes					value	
	Control (95% Cl)	Intervention (95% Cl)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% Cl)	P value	Control	Intervention	_
55-64 years	58.3 (50.0, 67.1)	58.7 (48.4, 69.1)	1.0 (0.8, 1.3)	0.9	1.0 (0.8, 1.3)	1.0	156	126	
65+years	44.7 (31.3, 58.0)	46.4 (37.5, 55.2)	1.1 (0.8, 1.6)	0.5	1.2 (0.9, 1.6)	0.2	150	138	
ental health									
Abnormal/borderline GHQ12 score %									0.9
16-24 years	4.2 (2.1, 6.3)	5.3 (2.4, 8.2)	1.0 (0.7, 1.3)	1.0	1.1 (0.6, 1.3)	0.7	405	452	
25-34 years	5.8 (4.0, 7.5)	5.4 (2.8, 8.1)	1.0 (0.7, 1.5)	0.9	1.0 (0.7, 1.3)	0.9	485	479	
35-44 years	6.0 (3.4, 8.6)	6.8 (4.0, 9.7)	1.1 (0.8, 1.6)	0.7	1.0 (0.6, 1.5)	1.0	384	410	
45-54 years	7.1	9.6	0.9	0.7	1.1	0.7	283	271	

	(mean of cont prevalen	ry statistics inuous variables, ce of binary comes)	Rate ratio for	r binary out	estimates comes, mean difl us outcomes	erence for	Sa	Overall <i>P</i> value	
	Control (95% Cl)	Intervention (95% Cl)	Unadjusted (95% CI)	P value	Adjusted (95% CI)	P value	Control	Intervention	_
	(3.7, 10.4)	(6.1, 13.1)	(0.7, 1.2)		(0.8, 1.5)				
55-64 years	9.0	11.3	1.7	0.4	1.1	0.8	156	123	
	(3.3, 14.6)	(5.2, 17.6)	(1.0, 2.7)		(0.8, 1.5)				
65+years	8.2	11.7	0.8	0.8	0.4	0.3	147	137	
	(1.4, 14.9)	(5.5, 17.9)	(0.4, 1.5)		(0.2, 0.7)				
Warwick Edinburgh Mental Wellbeing Scale- mean score									0.3
16-24 years	61.0	59.8	-1.48	0.3	-1.96	0.06	399	435	
	(58.9, 63.1)	(57.5, 62.3)	(-4.31, 1.36)		(-4.07, 0.14)				
25-34 years	59.9	59.1	-0.93	0.6	-1.58	0.2	487	475	
	(57.8, 62.0)	(56.7, 61.6)	(-4.27, 2.41)		(-3.94, 0.78)				
35-44 years	59.8	58.5	-1.41	0.4	-1.24	0.3	385	405	
	(58.0, 61.7)	(56.4, 60.7)	(-4.62, 1.80)		(-3.94, 1.46)				

	Summary statistics (mean of continuous variables, prevalence of binary outcomes)		Rate ratio for	binary out	estimates comes, mean diff us outcomes	Sa	Overall <i>P</i> value		
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	P value	Adjusted (95% Cl)	P value	Control	Intervention	_
45-54 years	59.2 (57.3, 61.2)	57.4 (55.5, 59.2)	-1.81 (-4.49)	0.2	-1.95 (-4.34, 0.44)	0.09	281	265	
55-64 years	60.6 (57.8, 63.5)	57.5 (55.6, 59.4)	-3.68 (-6.96, -0.41)	0.03	-2.83 (-6.31, 0.65)	0.1	152	122	
65+years	60.4 (57.7, 63.1)	57.2 (54.6, 59.9)	-2.71 (-5.43, 0.00)	0.05	-2.16 (-5.03, -0.71)	0.1	148	133	

Supplementary Table 2: Gender specific effect estimates for health outcomes

	Summary statistics (mean of continuous variables, prevalence of binary outcomes)		Rate ratio fo	Effect estimates Rate ratio for binary outcomes, mean difference for continuous outcomes				Sample size	
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	P value	Adjusted (95% CI)	P value	Control	Intervention	_
Primary health outcomes									
Healthy eating – meeting five-a- day (fruit and vegetable portions) %									0.9
Male	53.1	55.1	1.0	0.7	1.1	0.5	800	757	
	(46.5, 59.8)	(48.3, 61.9)	(0.9, 1.2)		(0.9, 1.2)				
Female	53.7	56.0	1.1	0.5	1.1	0.4	1025	1035	
	(47.5, 59.8)	(51.2, 60.9)	(0.9, 1.2)		(0.9, 1.2)				
Physical activity – meeting 5x30 mins moderate intensity activity per week %									0.9
Male	70.2	71.6	1.0	0.9	1.0	1.0	821	802	
	(63.3, 77.0)	(65.2, 77.9)	(0.9, 1.2)		(0.9, 1.2)				

		y statistics		Effect	estimates		Sa	mple size	Overall <i>P</i>
	(mean of continuous variables, prevalence of binary outcomes)		Rate ratio for binary outcomes, mean difference for continuous outcomes					value	
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% CI)	P value	Control	Intervention	_
Female	63.7 (55.3, 72.2)	66.0 (60.9, 71.1)	1.1 (0.9, 1.3)	0.5	1.0 (0.9, 1.2)	0.8	1053	1082	
Mental health									
Abnormal/borderline GHQ12 score %									0.5
Male	5.0	6.9	1.3	0.4	1.2	0.5	816	794	
	(3.1, 6.9)	(4.5, 9.4)	(0.8, 2.0)		(0.7, 1.9)				
Female	7.0	7.3	1.1	0.5	1.0	0.9	1044	1078	
	(4.9, 9.1)	(5.6, 9.1)	(0.8, 1.5)		(0.8, 1.3)				
Warwick Edinburgh Mental Wellbeing Scale- mean score									0.6
Male	60.4	59.3	-1.56	0.3	-1.87	0.1	809	782	
	(58.8, 62.1)	(57.1, 61.5)	(-4.42, 1.30)		(-4.28, 0.6)				
Female	59.9	58.2	-1.76	0.1	-1.81	0.08	1043	1053	

Summar	v statistics		Effect	Sa	Overall			
prevalenc	(mean of continuous variables, prevalence of binary outcomes)		binary outo continuo			<i>P</i> value		
Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Control Intervention	_
(95% CI)	(95% CI)	(95% CI)		(95% CI)				
(57.9, 61.9)	(56.4, 59.9)	(-4.09, 0.57)		(-3.93, 0.30)				

Supplementary Table 3: Ethnicity specific effect estimates for health outcomes

	(mean of variables, p	ry statistics continuous prevalence of putcomes)		r binary ou	estimates tcomes, mean ous outcomes	difference	Sa	Overall P value	
	Control (95% CI)	Intervention (95% Cl)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% Cl)	P value	Control	Intervention	_
Primary health outcomes									
Healthy eating – meeting five-a-day (fruit and vegetable portions) %									0.9
White British	46.2 (36.3, 56.1)	50.6 (43.5 <i>,</i> 57.8)	1.2 (1.0, 1.4)	0.09	1.2 (1.0, 1.4)	0.1	420	462	
White other	(30.3, 30.1) 57.0 (45.5, 68.4)	64.5 (55.2, 73.8)	(1.0, 1.4) 1.0 (0.8, 1.3)	0.8	(1.0, 1.4) 1.0 (0.8, 1.3)	0.8	237	310	
Black Caribbean	50.7 (42.0 <i>,</i> 59.5)	48.9 (40.8, 57.0)	1.0 (0.8, 1.2)	0.8	0.9 (0.8, 1.1)	0.5	203	186	
Black African	50.9 (41.6, 60.1)	52.1 (43.8, 60.4)	1.0 (0.7, 1.4)	0.8	0.9 (0.7, 1.3)	0.7	403	382	
Indian/Pakistani/Bangladeshi	62.8 (50.8 <i>,</i> 74.9)	59.6 (51.5, 67.8)	1.1 (0.9, 1.4)	0.3	1.2 (0.9, 1.5)	0.3	363	208	

		ry statistics			stimates		Sai	mple size	Overall P
	variables, p	continuous prevalence of putcomes)		•	tcomes, mean ous outcomes	difference		value	
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% Cl)	<i>P</i> value	Control	Intervention	_
Other/Mixed	55.3	61.1	1.0	0.8	1.0	0.6	199	244	
	(46.5, 64.1)	(54.1, 68.1)	(0.8, 1.3)		(0.8, 1.3)				
Physical activity – meeting 5x30 mins noderate intensity activity per week %									0.8
White British	70.5	67.1	1.0	0.9	1.0	0.8	431	484	
	(63.5, 77.6)	(62.7, 71.6)	(0.9, 1.1)		(0.9, 1.1)				
White other	71.8	38.2	1.1	0.4	1.1	0.4	330	249	
	(64.3, 79.3)	(26.7, 49.6)	(0.9, 1.4)		(0.9, 1.4)				
Black Caribbean	69.3	69.9	1.0	0.8	0.9	0.5	205	196	
	(59.8, 78.7)	(60.2, 79.6)	(0.8, 1.2)		(0.7, 1.2)				
Black African	66.7	70.8	1.0	0.9	1.0	1.0	418	397	
	(57.8, 75.7)	(62.9, 78.7)	(0.8, 1.2)		(0.8, 1.2)				
Indian/Pakistani/Bangladeshi	55.4	61.5	1.1	0.6	1.0	0.8	368	221	
	(42.6, 68.2)	(51.4, 71.7)	(0.8, 1.5)		(0.8, 1.4)				

	Summar	ry statistics		Effect e	estimates		Sa	mple size	Overall
	variables, p	continuous prevalence of putcomes)		•	tcomes, mean ous outcomes	difference			<i>P</i> value
	Control (95% CI)	Intervention (95% Cl)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% CI)	P value	Control	Intervention	_
Other/Mixed	65.0	67.2	1.1	0.7	1.1	0.7	203	256	
	(53.4, 76.7)	(58.2, 76.1)	(0.8, 1.5)		(0.8, 1.5)				
Mental health									
Abnormal/borderline GHQ12 score %									0.4
White British	6.8	10.0	1.0	0.9	1.2	0.6	426	480	
	(3.3, 10.3)	(6.1, 13.9)	(0.6, 1.7)		(0.7, 1.8)				
White other	7.8	6.1	0.9	0.8	1.0	0.9	244	328	
	(3.9, 11.7)	(2.0, 10.2)	(0.6, 1.3)		(0.6, 1.5)				
Black Caribbean	7.8	6.7	1.0	1.0	0.9	0.7	205	195	
	(4.6, 11.0)	(2.9, 10.4)	(0.7, 1.5)		(0.6, 1.3)				
Black African	4.1	3.5	1.2	0.7	1.1	0.6	413	396	
	(1.6, 6.6)	(0.9, 6.2)	(0.8, 1.7)		(0.9, 1.4)				

	Summar	y statistics		Effect e	stimates		Sai	mple size	Ove
	variables, p	continuous prevalence of putcomes)		•	tcomes, mean ous outcomes	difference			<i>P</i> value
-	Control (95% CI)	Intervention (95% Cl)	Unadjusted (95% CI)	P value	Adjusted (95% Cl)	P value	Control	Intervention	_
Indian/Pakistani/Bangladeshi	4.3 (1.7, 6.9)	6.8 (2.4, 11.3)	4.6 (0.5, 41.3)	0.1	3.8 (2.6, 5.5)	0.05	369	219	
Other/Mixed	8.4 (5.0, 11.7)	9.4 (4.8, 14.1)	1.0 (0.8, 1.2)	0.9	1.4 (1.0, 2.0)	0.3	203	254	
Warwick Edinburgh Mental Wellbeing Scale- mean score									0.4
White British	59.3 (57.8 <i>,</i> 60.7)	57.2 (55.4 <i>,</i> 59.1)	-0.2 (-0.3, 0.01)	0.07	-2.4 (-4.5 <i>,</i> -0.3)	0.03	427	473	
White other	60.9 (59.5, 62.3)	58.6 (55.7, 61.4)	-1.5 (-5.0, 2.0)	0.4	-2.0 (-4.6, 0.5)	0.1	248	318	
Black Caribbean	57.6 (54.2, 60.9)	59.6 (57.0, 62.1)	0.5 (-3.2, 4.1)	0.8	-0.3 (-4.0, 3.4)	0.9	200	187	
Black African	59.8 (57.0, 62.6)	59.1 (56.3, 61.8)	-1.2 (-4.2, 1.7)	0.4	-1.5 (-4.0, 1.1)	0.2	410	391	

	(mean of o variables, p	v statistics continuous revalence of utcomes)		binary ou	stimates tcomes, mean ous outcomes	difference	Sai	Overall <i>P</i> value	
-	Control (95% CI)	Intervention (95% CI)	Unadjusted (95% CI)	P value	Adjusted (95% Cl)	P value	Control	Intervention	_
Indian/Pakistani/Bangladeshi	62.1 (58.3, 65.9)	61.0 (57.7, 64.4)	-1.4 (-5.6, 2.8)	0.5	-1.9 (-5.4, 1.7)	0.3	365	215	
Other/Mixed	60.7 (59.2, 62.3)			-3.0 0.1 (-6.7, 0.7)		-2.4 0.2 (-5.8, 1.1)		202 251	

	Summar	y statistics		Effect	estimates		Sai	mple size	Overall
	prevalen	inuous variables, ce of binary comes)	Rate ratio for		comes, mean di us outcomes	fference for		P value	
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Control Intervention	_
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
rimary health outcomes									
ealthy eating – meeting five-a- ay (fruit and vegetable portions)									0.3
In paid employment	58.7	61.0	1.0	0.7	1.0	0.4	782	766	
	(52.7, 64.7)	(54.2, 67.7)	(0.9, 1.2)		(0.9, 1.2)				
ILO unemployed (seeking	46.9	44.9	0.9	0.7	0.9	0.7	194	216	
work)	(38.7, 55.1)	(37.9, 51.9)	(0.7, 1.3)		(0.7, 1.3)				
Full time education	49.4	51.2	0.9	0.6	0.9	0.7	251	268	
	(41.4, 57.4)	(40.6, 61.6)	(0.6, 1.3)		(0.6, 1.3)				
Unable to work	40.9	46.5	1.1	0.5	1.0	0.4	115	114	
(disability/illness)	(31.4, 50.3)	(36.1, 56.9)	(0.8, 1.5)		(0.8, 1.4)				
Not employed not seeking/retired/ Carer/Other	52.6	56.8	1.1	0.3	1.1	0.3	483	428	

Supplementary Table 4: Employment-status specific effect estimates for health outcomes

	Summar	y statistics		Effect	estimates		Sa	mple size	Overall
	prevalence	nuous variables, ce of binary omes)	Rate ratio for	•	comes, mean di us outcomes	fference for			<i>P</i> value
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Intervention	_
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
	(43.8, 61.4)	(50.7, 62.8)	(0.9, 1.4)		(0.9, 1.3)				
Physical activity – meeting 5x30 mins moderate intensity activity per week %									0.06
In paid employment	73.0	70.8	1.0	0.6	0.9	0.6	803	797	
	(65.2, 80.8)	(64.8, 76.7)	(0.8, 1.1)		(0.8, 1.1)				
ILO unemployed (seeking	64.8	75.6	1.1	0.1	1.1	0.2	199	225	
work)	(55.4, 74.3)	(67.8, 83.3)	(1.0, 1.4)		(1.0, 1.3)				
Full time education	73.6	77.5	1.1	0.3	1.1	0.3	307	261	
	(61.6, 82.5)	(71.7, 83.4)	(0.9, 1.3)		(0.9, 1.2)				
Unable to work	44.0	40.9	0.9	0.7	0.9	0.7	116	115	
(disability/illness)	(31.9, 56.0)	(31.3, 50.5)	(0.7, 1.2)		(0.7, 1.2)				
Not employed not	58.4	61.1	1.0	0.9	1.0	0.9	495	440	
seeking/retired/ Carer/Other	(49.1, 67.7)	(54.3 <i>,</i> 68.0)	(0.7, 1.4)		(0.7, 1.3)				

	(mean of cont prevalen	ry statistics inuous variables, ce of binary comes)	Rate ratio fo	r binary out	estimates comes, mean di us outcomes	fference for	Sa	Overall P value	
	Control (95% CI)	Intervention (95% CI)	Unadjusted (95% CI)	P value	Adjusted (95% Cl)	P value	Control	Intervention	_
lental health									
Abnormal/borderline GHQ12 score %									0.1
In paid employment	3.0	3.9	1.5	0.08	1.3	0.1	798	795	
	(1.8, 4.3)	(1.9, 5.8)	(1.1, 2.0)		(0.9, 1.9)				
ILO unemployed	9.1	7.7	1.1	0.8	1.6	0.2	197	222	
(seeking work)	(5.7, 12.6)	(4.6, 10.7)	(0.8, 1.6)		(1.0, 2.4)				
Full time education	5.4	4.6	1.1	0.7	1.6	1.0	260	306	
	(2.2, 8.6)	(1.6, 7.6)	(0.9, 1.4)		(1.5, 1.6)				
Unable to work	18.8	35.1	1.8	0.02	1.3	0.2	112	111	
(disability/illness)	(10.0, 27.5)	(24.9, 45.4)	(1.4, 2.4)		(1.0, 1.7)				
Not employed not	7.5	7.5	1.1	0.8	1.0	0.3	493	438	
seeking/retired/ Carer/Other	(4.1, 10.9)	(4.8, 10.3)	(0.8, 1.5)		(0.7, 1.4)				

Warwick Edinburgh

	(mean of cont prevalen	y statistics inuous variables, ce of binary comes)	Rate ratio for	r binary out	estimates comes, mean di us outcomes	fference for	Sa	Overall <i>P</i> value	
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Intervention	_
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
Mental Wellbeing Scale- mean score									
In paid employment	60.6	59.5	-1.2	0.4	-1.1	0.2	797	780	
	(59.1, 62.1)	(57.1, 61.8)	(-4.2, 1.9)		(-3.7, 1.5)				
ILO unemployed	60.2	58.7	-1.2	0.4	-1.2	0.3	196	222	
(seeking work)	(58.4, 61.9)	(56.8, 60.6)	(-4.0, 1.5)		(-3.2, 0.9)				
Full time education	60.7	58.8	-1.3	0.4	-1.6	0.08	255	292	
	(58.4, 63.1)	(55.8, 61.7)	(-4.6, 1.9)		(-4.3, 1.1)				
Unable to work	58.0	53.4	-3.4	0.09	-2.7	0.2	113	111	
(disability/illness)	(54.6, 61.3)	(51.5, 55.2)	(-7.3, 0.6)		(-6.3, 0.9)				
Not employed not	59.5	58.5	-1.4	0.2	-1.4	0.3	491	429	
seeking/retired/ Carer/Other	(57.1, 61.8)	(56.5, 60.6)	(-3.6, 0.8)		(-3.6, 0.9)				

	Summar	y statistics		Effect	estimates		Sa	mple size	Overall <i>P</i> value
	prevalen	inuous variables, ce of binary comes)	Rate ratio fo	•	comes, mean di us outcomes	ifference for			
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Intervention	
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
Primary health outcomes									
lealthy eating – meeting five-a- lay (fruit and vegetable portions) %									0.1
No formal qualifications	51.9	49.7	1.0	0.9	1.1	0.6	214	189	
	(41.1, 63.7)	(40.1, 59.4)	(0.7, 1.4)		(0.8, 1.4)				
GCSE or equivalent	46.5	51.7	1.0	0.6	1.1	0.5	527	617	
	(40.3, 52.6)	(45.4, 58.0)	(0.8, 1.3)		(0.9, 1.4)				
A-level or equivalent	59.4	54.5	1.1	0.4	1.1	0.3	360	387	
	(43.4, 55.5)	(47.6, 61.4)	(0.9, 1.3)		(0.9, 1.3)				
University degree	61.1	62.5	1.0	0.9	1.0	0.7	676	563	
	(53.7)	(55.4, 69.7)	(0.8, 1.2)		(0.8, 1.2)				
Other	58.3	58.3	1.1	0.8	1.3	0.6	48	36	

Supplementary Table 5: Educational-level specific effect estimates for health outcomes

	Summar	y statistics		Effect	estimates		Sa	mple size	Overall
	prevalen	inuous variables, ce of binary comes)	Rate ratio for	•	comes, mean di us outcomes	fference for			<i>P</i> value
	Control	Intervention	Unadjusted	P value	Adjusted	P value	Control	Intervention	
	(95% CI)	(95% CI)	(95% CI)		(95% CI)				
	(38.9, 77.8)	(39.3, 77.4)	(0.7, 1.7)		(0.9, 1.8)				
Physical activity – meeting 5x30 mins moderate intensity activity per week %									0.3
No formal qualifications	46.8	54.6	1.0	0.9	1.0	0.8	220	196	
	(32.9, 60.7)	(45.0, 64.1)	(0.7, 1.4)		(0.8, 1.2)				
GCSE or equivalent	68.4	70.2	1.0	0.7	1.0	0.9	538	642	
	(60.8, 76.0)	(65.4, 75.1)	(0.9, 1.3)		(0.8, 1.2)				
A-level or equivalent	68.1	71.2	1.0	0.9	1.0	0.9	373	416	
	(61.7, 74.5)	(64.1, 78.2)	(0.9, 1.2)		(0.9, 1.2)				
University degree	70.6	69.7	1.0	0.7	3	0.8	691	591	
	(62.1, 79.2)	(63.8, 75.6)	(0.9, 1.2)						
Other	65.4	56.4	0.7	0.09	1.0	0.9	52	39	
	(50.3, 80.4)	(45.5, 67.3)	(0.6, 0.9)		(0.8, 1.5)				

	(mean of cont prevalen	ry statistics tinuous variables, nce of binary comes)	Rate ratio for	Effect estimates Rate ratio for binary outcomes, mean difference for continuous outcomes				Sample size		
	Control (95% Cl)	Intervention (95% CI)	Unadjusted (95% CI)	<i>P</i> value	Adjusted (95% Cl)	<i>P</i> value	Control	Intervention	_	
ntal health										
Abnormal/borderline GHQ12 score %									0.5	
No formal qualifications	5.5 (0.9, 10.2)	9.3 (4.2, 14.3)	1.0 (0.6, 1.9)	0.9	1.4 (0.9, 2.3)	0.5	217	194		
GCSE or equivalent	6.5 (3.5 <i>,</i> 9.6)	7.2 (5.0, 9.4)	0.9 (0.6, 1.4)	0.7	1.1 (0.7, 1.7)	0.7	535	638		
A-level or equivalent	7.3 (4.7, 9.9)	8.5 (4.6, 12.3)	1.3 (0.8, 2.0)	0.5	1.2 (0.7, 1.8)	0.7	370	412		
University degree	5.2 (3.7, 6.7)	5.1 (3.3, 6.8)	0.9 (0.7, 1.1)	0.5	0.8 (0.6, 1.0)	0.2	688	590		
Other	8.0 (0.0, 17.3)	13.2 (2.7, 23.6)	-	-	-	-	50	38		

Warwick Edinburgh

Mental Wellbeing Scale-

	Summary statistics (mean of continuous variables, prevalence of binary outcomes)		Effect estimates Rate ratio for binary outcomes, mean difference for continuous outcomes				Sample size		Overall <i>P</i> value
	Control (95% CI)	Intervention (95% CI)	Unadjusted (95% CI)	P value	Adjusted (95% CI)	P value	Control	Intervention	-
mean score									
No formal qualifications	61.5 (57.0 <i>,</i> 66.0)	60.3 (57.7, 62.9)	-1.4 (-7.2, 4.3)	0.6	-0.7 (-6.3 <i>,</i> 4.9)	0.8	215	193	
GCSE or equivalent	60.1 (58.2, 61.2)	59.0 (59.8, 61.2)	-1.8 (-4.3, 0.6)	0.1	-2.2 (-4.4, 0.0)	0.05	627	527	
A-level or equivalent	58.9 (57.0, 60.8)	56.7 (54.9, 58.5)	-2.0 (-5.1, 1.1)	0.2	-2.7 (-5.1, -0.2)	0.04	365	399	
University degree	60.9 (59.3, 62.5)	59.4 (57.0, 61.7)	-1.6 (-4.1, 0.9)	0.2	-1.6 (-3.7, 0.4)	0.1	685	579	
Other	53.0 (50.5 <i>,</i> 55.5)	54.4 (52.1, 56.8)	-1.4 (-8.5, 5.8)	0.7	-1.5 (-4.6, 1.6)	0.5	52	37	