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2 evaluation of a school-and-community based intervention in East London, UK

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26 **ABSTRACT**

27 **Background:** The NECaSP intervention aspires to increase sport and physical activity (PA)
28 participation amongst young people in the UK. The aims of this paper are to report on a
29 summative process evaluation of the NECaSP and make recommendations for future
30 interventions. **Methods:** Seventeen schools provided data by students aged 11-13 (n=913),
31 parents (n=192) and teachers (n= 14) via direct observation and questionnaires. Means,
32 standard deviations and percentages were calculated for socio-demographic data. Qualitative
33 data was analysed via directed content analysis and main themes identified. **Results:** Findings
34 indicate further administrative, educational and financial support will help facilitate the
35 success of the programme in improving PA outcomes for young people, and of other similar
36 intervention programmes globally. Data highlighted the need to engage parents to increase
37 likelihood of intervention success. **Conclusions:** One main strength of this study is the
38 mixed-methods nature of the process evaluation. Changes in the school curriculum can be
39 successful once all parties are involved (community, school, families). Finally it is
40 recommended that future school based interventions that bridge sports clubs and formal
41 curriculum provision, should consider a more broad approach to the delivery of programmes
42 throughout the academic year, school week and school day.

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51 INTRODUCTION

52 Research overwhelmingly indicates that regular physical activity (PA) can lead to
53 reduction of overweight and obesity, and reduce the risk for type 2 diabetes, and mental
54 health problems such as depression and anxiety among young people¹. Additionally,
55 sedentary time (ST), defined as time spent in sedentary behaviours such as sitting or laying, is
56 also now considered to be an important independent contributor to overweight and obesity².
57 Current guidelines for PA in childhood are to accumulate 60 minutes per day of moderate to
58 vigorous intensity PA³. There are no specific guidelines for healthy levels of ST among
59 children and adolescents, though it is generally recommended that long periods of ST be
60 broken up throughout the day³.

61 The Health Survey for England reported that 16% of boys and 25% of girls in London
62 were categorised as having a low level of PA⁴. The School Sport Survey (2008-2009), a
63 survey of students aged 5-16 years old that evaluates time spent in physical education (PE)
64 and out of school sport each week, reported that in Newham Borough of East London only
65 36% met the target of 3 or more hours of PA per week compared to 46% in London and 50%
66 nationally⁵. Additionally, evidence suggests that young people's PA drops off dramatically
67 from age 11, highlighting the need for interventions targeting this age group⁶.

68 In response to low levels of PA among young people in East London a focus on
69 increasing PA and sport among children and young people was declared a major goal of the
70 legacy of the London 2012 Olympics and Paralympics⁷. Revised physical education (PE)
71 curriculum and PA interventions in schools and in the community have since been funded
72 and implemented following the London 2012 Olympic Games. These initiatives have focused
73 on enabling students to be more physically active for sustained periods of time, developing
74 competence and confidence in a range of PA, and providing opportunities to engage in
75 sports⁸. One such intervention is Newham's Every Child a Sports Person (NECaSP)

76 programme. This intervention utilises school-based (PE curriculum) and community- based
77 strategies (sports clubs) to deliver Year 7 (11-13 year old) students in East London access to
78 more than 20 sports and activities⁹.

79 As the number of successful and unsuccessful interventions targeting young people's
80 PA and ST has risen, it has become increasingly important to understand why a program was
81 or was not successful at eliciting these behaviour changes alongside the outcomes or impacts
82 of an intervention¹⁰. Process evaluation provides a comprehensive view of program
83 implementation and explores how that could impact the outcomes of an intervention¹⁰. A
84 summative process evaluation examines intervention data at follow-up and evaluates whether
85 it was implemented as planned and provides recommendations for future intervention¹¹.

86 The aims of this paper are to report on a multi-method summative process evaluation
87 of the NECaSP programme and to identify barriers and facilitators to the delivery of the
88 intervention in an effort to contribute to the development of future intervention programmes
89 aiming at increasing PA and reducing ST among diverse adolescents.

90 **METHODS**

91 **Intervention Background**

92 The NECaSP programme is a case series intervention targeting all Year 7 students
93 from 17 secondary schools in the Newham borough of East London. Data for this study can
94 be found published elsewhere¹². The intervention included 3 phases: 1) an introductory day
95 in schools for students to sample a range of sport and PA with coaches from local sports
96 clubs (4 hours in length), 2) a session at the host institution sports centre where students were
97 coached on 5 sports (5 hours in length), and 3) alteration of PE curriculum with the
98 opportunity for students to engage in a 6-week after school programme (1 hour in length x 1
99 day per week) on a sport of their choosing delivered by coaches from local sports clubs¹².
100 The primary outcome of the intervention was to increase participation in PA and sport among

101 Year 7 students. Secondary outcomes included reducing ST and joining local sports clubs in
102 the community. Briefly outcome data showed: sample size was n=913; n=557 at baseline and
103 n=356 at follow-up. No increase in students meeting PA recommendations was found at
104 follow-up but PA on weekends was significantly higher at weekends at follow-up ($p<.05$) and
105 participation in 5 sports (badminton, volleyball, cricket and rowing) was higher at follow-up
106 ($p<.05$). Over 66% of participants at follow-up indicated that they would maintain
107 participation in a sports club as a result of the NECaSP intervention¹².

108 **Process Evaluation Methods**

109 As the importance of process evaluations is becoming more prevalent, researchers are
110 increasingly reporting on the implementation of their interventions, though there is no
111 consensus on what elements should be included¹³. Therefore elements of commonly used
112 frameworks have been incorporated in this process evaluation based upon the works of
113 Griffin et al, and Saunders, et al.^{10, 13}. A systematic framework was used to evaluate the
114 intervention's delivery quantity, quality and provide an overall evaluation of the
115 intervention by participants, parents and teachers^{10, 13}. Although fidelity, whether intervention
116 implementation adhered to the original plan, was not specifically measured via validated
117 fidelity indices; quantity, quality and overall evaluation were used as indicators of
118 intervention fidelity¹³. Table 1 provides a summary of all process evaluation components.

119 Quantity is defined as an assessment of how many students, schools, and coaches
120 participated in the programme, and number of sessions/sports delivered. Quality was assessed
121 by examining participation, communication and organisational effectiveness. Finally, the
122 programme was evaluated by examining the expectations, awareness of the programme and
123 recommendations for improvements by students, parents, and teachers. Additionally, socio-
124 demographic data (age, sex, Index of Multiple Deprivation (IMD), self-reported ethnicity)

125 was collected. All participants provided informed consent and the Research Ethics
126 Committee of the host institution approved this study.

127 *Data Collection Instruments*

128 Intervention records kept by programme administrators were used for evaluation
129 components regarding quantity. Additionally, attendance records kept by schools were used
130 to assess pupil participation numbers (Table 1).

131 Direct observation was used to assess quality of the intervention. Quality of
132 organisation and communication was observed by the research team to provide a description
133 of this evaluation component. Direct observation was undertaken on intervention staff,
134 teachers, coaches and students quarterly during the intervention. A member of the research
135 team was present at 50% of intervention activities to conduct direct observation. Data was
136 recorded via notes by the research team member. Email communications between
137 intervention staff, teachers, coaches and the research team members were also used as a
138 means of data collection (Table 1).

139 Students completed a pre-intervention (baseline) questionnaire that included questions
140 on their expectations of the NECaSP programme and a post-intervention (follow-up within 1
141 week of completion) questionnaire on their perceived gains from the programme. Parents of
142 Year 7 students completed a questionnaire on their awareness of the programme, perception
143 of the effectiveness of the programme, and improvements to future implementation. PE
144 teachers were asked to complete a questionnaire giving their opinions on the quality of
145 service from the intervention staff, effectiveness of the programme, and improvements for
146 future implementation (Table 1).

147 **ANALYSIS**

148 Means, standard deviations and percentages were calculated for socio-demographic
149 data. Counts and percentages were computed for quantity and quality variables. For quality

150 variables data was analysed via directed content analysis and main themes identified¹⁴. T-
151 tests and ANOVAs were conducted to determine significant differences between baseline and
152 follow-up data. McNemar Chi-square tests were used to determine if there were any
153 significant differences between baseline and follow-up responses to expectations and
154 perceived gains questions. Parent and teacher questionnaires were analysed via directed
155 content analysis¹⁵ and main themes identified. All statistical analyses were conducted in
156 PASW v21 (Quarry Bay, Hong Kong).

157 **RESULTS**

158 **Quantity**

159 *Participating Schools and Students*

160 Sixteen of 17 eligible secondary schools from Newham, London agreed to take part.
161 Three participated in Phase 1, 5 participated in Phases 1 and 2, and 6 completed all three
162 phases of the programme. Four schools kept records of attendance for participation in the
163 programme. Three schools (referred to schools A, B and C) have complete attendance data
164 for Phases 1-3. School C had the highest percentage of students completing all phases of the
165 programme (79.8%).

166 Three (37.5%) schools (schools A,B and C) who completed Phases 1-3 also
167 completed baseline and follow-up questionnaires. Table 2 summarises socio-demographic
168 data for students of these schools. The baseline sample was n=557 students and n=356 at
169 follow-up, with an overall response rate of 63.9%. Mean age of students at baseline was
170 11.44±.50 and 11.44±.53 at follow-up. Sex at baseline and follow-up was 52.8% and 56.2%
171 male and 43.3% and 47.2% female. Sixteen ethnicities were self-identified with Asian
172 Bangladeshi (22.8%, 26.1%), Black African (15.6%, 13.2%) and White Other (12.2%,
173 10.4%) most commonly reported. The majority of the sample were in the most deprived IMD

174 group (83.7%, 85.1%) (Data.gov.uk, 2015). T-tests and ANOVAs revealed no significant
175 differences in the baseline and follow-up samples for socio-demographic variables.

176 *Number of Sessions Delivered*

177 Intervention records indicate that for schools who participated, the desired number of
178 sessions in each phase was reached. In Phase 1, an average of 5 sports sessions were
179 delivered in each of the 16 participating schools (goal was 4-6). In Phase 2, 5 sports sessions
180 were delivered to each of the 13 participating schools (goal was 5). In Phase 3, 1 sports
181 session was delivered over a 6-week period in all 8 participating schools (goal was 1 session).

182 *Sports and Coaches*

183 The NEaSP programme offered 20 sports for schools and students to choose from.

184 Records indicate that students themselves selected all 20 sports delivered in schools.

185 The most common sports chosen were: archery (n=6), BMX (n=5), fencing

186 (n=4), taekwondo (n=3), capoeira (n=3), boxing (n=3), futsal (n=2), and basketball (n=2).

187 Coaches from local sports clubs in East London were invited to conduct coaching sessions.

188 Sixty sports clubs were included in the programme. Twenty-five coaches from these clubs

189 participated in sessions throughout the programme.

190 **Quality**

191 *Were students able to participate?*

192 Records and email correspondence from schools and NECaSP administrators were

193 analysed for data on non-participation by schools. Data indicate that the key barriers to

194 participation by schools were: 1) inability to fit the programme into their regular curriculum

195 and 2) inability to afford the costs and staffing associated with traveling from school to the

196 host institution facilities. Schools frequently referenced their demanding schedules and the

197 need to meet deadlines that had priority above delivery and participation in the NECaSP

198 programme. While they indicated a strong interest in engaging with the programme, they

199 were unable to facilitate the programme within these constraints. Furthermore, while the
200 majority of costs associated with participation in the programme were covered by the
201 programme, costs of travel for Phase 2 was designated as the responsibility of schools. Non-
202 participant schools indicated they could not accommodate this extra cost. One teacher from
203 School B reported:

204 'Buses to get to UEL are really expensive so we might not be able to bring everyone.'

205 Additionally, many schools indicated difficulties with having enough staff to
206 accompany students to the venue, or enough staff remaining at the school while others
207 travelled with students to the venue.

208 Analyses indicate that in participating schools there were few barriers to students'
209 participation in the NECaSP programme. Students were able to vote on the sport they
210 preferred in the 6-week after school curriculum. The main barrier to participation was
211 identified for Phase 3. Schools and NECaSP administrators indicated the main barrier was
212 lack of spaces in the 6-week after school programme to accommodate all students who
213 wanted to participate. As a result of limited space, teachers explained that they had to choose
214 which students to refer into the programme. Criteria for selection included, showing an
215 interest in the specific sport that the programme would focus on, currently active, and
216 showing good behaviour.

217 *Was communication effective?*

218 Analyses of direct observation and email communications of programme
219 administrators, schools, programme staff, and research team indicate that overall, the
220 communication among and between all parties needed improvement. Data indicate that
221 expectations for schools, teachers, students and parents may not have been sufficiently
222 expressed to each party. Many schools seemed unaware of the programme's aims and

223 objectives and were therefore unable or unwilling to engage in some phases of the
224 programme. This limited the ability of students to participate in some or all components of
225 the programme.

226 A secondary outcome of the NECaSP programme was to encourage students to join
227 local sports clubs. Analyses indicate that very little was communicated to them on how to
228 join a sports club. Many teachers and coaches made no mention of how to join clubs. This
229 was especially apparent at taster days during Phase 2. Little time was dedicated to expressing
230 why students were attending the event or how to join a new club. In fact, direct observations
231 indicated there were at least 2 students in each taster session who asked what the programme
232 was for. The taster day consisted of staff bringing all participants together to hand out an
233 informational pamphlet and discuss the day's events. Of the 8 sessions observed, 2 provided
234 information on how students could join a local sports club.

235 *Was organisation effective?*

236 Organisational responsibilities for the NECaSP programme were divided and
237 allocated amongst programme's administrators, schools and sports clubs. Administrators
238 were responsible for recruiting sports clubs and coaches into the programme, supplying
239 sports equipment, and supplying the venue for Phase 2.

240 Schools were responsible for scheduling students throughout the programme.
241 Guidelines for timing of the delivery of each phase were provided by the administrators.
242 Phase 1 was to be delivered within the first term of the school year. Schools were able to
243 choose from a selection of pre-set dates for Phase 2 sessions. Phase 3 was to be delivered
244 before schools closed for summer term. Two participating schools were unable to deliver
245 Phase 1 during the first term of the school year, and instead delivered this phase after half-
246 term. These 2 schools did not complete subsequent phases of the programme. All other
247 participating schools were able to deliver Phase 1 in the designated timeframe. Four schools

248 (of n=13) re-scheduled sessions for Phase 2 due to scheduling conflicts. This re-scheduling
249 pushed the timing of delivery for Phase 3 to later in the school year. Therefore 2 schools were
250 unable to deliver the 6-week curriculum for Phase 3 before the end of the school year. A
251 further 3 schools were unable to meet the deadline for Phase 3. Schools attributed this to a
252 lack of time and staff in the final term of the school year. All 13 schools that participated in
253 Phase 2 were able to meet the responsibility of providing transportation for students from
254 school to the sports facilities.

255 **Evaluation of Intervention**

256 *Expectations & Awareness*

257 The baseline student questionnaire included questions on what students hoped to gain
258 from participation in the NECaSP programme. They were able to select from the following
259 choices: Be more physically active, Learn about health and sport, Learn to play a sport, Be
260 more sporty, Be more healthy, and Spend time with friends. In the follow-up questionnaire
261 student selected from the same list to indicate if they achieved any of these. McNemar Chi-
262 square tests were used to determine significant differences between baseline and follow-up
263 responses. Significant differences for the “be more sporty” and “be more healthy” choices
264 were seen, with baseline percentages lower than follow-up. The percentage of students
265 choosing 'being more physically active', 'learning about health and sport', and 'spending time
266 with friends' was higher at follow-up compared to baseline, not significant.

267 Parents (n=192) from 5 participating schools (of which 3 completed all phases of the
268 programme) completed a questionnaire on family well-being and parental attitudes towards
269 the NECaSP programme. Mean age of the sample was 40.38 ± 6.50 and the majority of the
270 sample (64.9%) was female. The majority of parents were categorised as being in the most
271 deprived IMD quintile (93.3%). 76.3% were a 2-parent household and 19% were a 1-parent
272 household. 73.2% of parents in this sample reported not being made aware of the NECaSP

273 programme. Nearly 35% (n=68) of parents answered the question regarding if NECaSP had
274 changed their child's participation in sport/PA in the last 7 days. 76.5% of these parents
275 responded that they did not think NECaSP had changed their child's activity. 55.3% reported
276 that time was a barrier and 19.1% said money was a barrier. When asked if the NECaSP
277 programme had changed their child's participation in sport or PA in the last month, 65.6%
278 answered no. Time (56.8%) and money (21.6%) were the most common barriers reported.

279 Heads of PE from 14 schools completed questionnaires on their thoughts on the
280 NECaSP programme. Two main questions were included to examine their views on the
281 effectiveness of the programme: 1) did the NECaSP live up to your expectations? and 2)
282 Please rate your overall NECaSP experience. Heads of PE were able to rate these on a scale
283 of 1(disappointing)-5 (exceptional). Overall, heads of PE reacted positively to the NECaSP
284 programme. 28.6% (n=4) rated meeting their expectations as a 5 (exceptional) and 71.4%
285 (n=10) of respondents rated meeting their expectations of the programme as a 4. For overall
286 experience, 57.1% (n=8) respondents rated the experience as a 5 and 42.9% (n= 6) rated it as
287 a 4.

288 Heads of PE were also asked about the quality of service from the administrators and
289 sports clubs, and the quality of sports equipment and information on sports clubs that was
290 provided. Quality of service was rated highly, with 42.9% (n=6) of respondents rating the
291 programme as exceptional (5), 42.9% (n=6) rating it just below exceptional (4), 7.1% (n=1)
292 rating it as a 3 and 7.1% (n=1) rating it as a 2.

293 Quality of service from local sports clubs was also rated relatively highly. 50% (n=7)
294 of Heads of PE rated the service quality from local sports clubs as exceptional (5),
295 28.6% (n=4) gave a rating of 4, and 21.4% (n=3) gave a rating of 3. Heads of PE who were
296 less satisfied with the quality of service from sports clubs cited a need for coaches to improve
297 teaching techniques and to begin sessions on time. 78.6% (n=11) of respondents rated the

298 quality of sports equipment provided as a 4 or 5. 71.4% (n=10) rated the quality of
299 information provided on sports clubs as a 4 or 5. Respondents who were unsatisfied with the
300 quality of information provided on sports clubs recommended that NECaSP or clubs provide
301 flyers at each session outlining how students could join clubs and have staff and coaches
302 provide more information during taster sessions.

303 *Recommendations for Improvements*

304 Students, parents and heads of PE were invited to give feedback on improvements
305 they would recommend for the NECaSP programme via questionnaire. Students were asked
306 what more could be done to help them begin or maintain participation in a sports club/PA.
307 Parents were asked what they thought would help to make NECaSP a successful programme.
308 Heads of PE were asked how they would improve the NECaSP programme.

309 At follow-up, 45.6% of students responded to the question regarding what more could
310 be done to help them begin or maintain participation in a sports club/PA. Analysis indicates 5
311 themes most commonly cited as helpful to students' beginning or maintaining this
312 participation. Continued encouragement to try out or continue to engage in sports/PA was
313 reported by 23.6% of students. 21.7% of students reported that they would begin or maintain
314 a sport if sports and activities were organised for them on a regular basis. Students (11.8%)
315 requested that schools continue to introduce them to new sports. They (8.1%) also reported
316 that they were more likely to begin or maintain a sport if a variety of sports was regularly
317 offered during PE classes in school. Interestingly, 5.1% of students responded that if teachers
318 were more compassionate toward less active students they would be more likely to engage in
319 sports/PA.

320 22.7% of parents completed the question on making the NECaSP a successful
321 programme. 29.5% of respondents indicated that having access to more sports clubs through
322 schools would make the programme successful. Offering sports and activities at convenient

323 times and locations was regarded as important to the success of the programme by 20.5% of
324 parents. Some parents indicated that weekends were the most convenient times and that
325 parents would also engage in the activities at this time. Finally, free or reduced rates for
326 sports and activities were also considered important to parents (15.9%).

327 Heads of PE made several suggestions for the improvement of the NECaSP
328 programme. One key suggestion, as mentioned previously, was to have flyers from sports
329 clubs available at each session giving information to students on how to join clubs. One head
330 of PE states:

331 “Clubs bringing flyers to hand out to the students as I feel that was a missed
332 opportunity as the uptake from the sessions could be high.”

333 The need for improvement in the sports coaches' teaching techniques was cited by
334 many heads of PE. For example, one commented:

335 “For example they could learn how to increase the pace of their sessions, engage with
336 more learners, challenge the more able and help the less able, therefore achieving
337 more learning and increasing the enjoyment for more students.”

338 The length of sessions was of concern as well. Some suggested offering fewer sports,
339 but more time in each session. Finally, heads of PE were particularly concerned with the
340 costs of continuing the programme in their schools. One head of PE comments:

341 “Excellent opportunity for the students but due to costing we cannot afford to run any of the
342 clubs in school.”

343 **DISCUSSION**

344 This study reports the findings of a summative process evaluation of the NECaSP
345 programme and highlights achievements and areas for improvement. Findings indicate that

346 while the intervention was generally well received by participants, parents and teachers, there
347 were some barriers to the success of the programme. Using records kept by schools and
348 programme administrators, direct observations, email communication, and questionnaires we
349 were able to identify problematic issues of the intervention which can be used to improve the
350 design and implementation of future PA interventions with young people.

351 **Barriers**

352 Although fidelity, was not specifically measured via validated fidelity indices, the
353 elements measured in this evaluation provide an indication as to how closely the intervention
354 adhered to the original planned implementation¹³. Issues with fidelity were apparent in
355 quantity of session delivered, phases completed by schools and number of students who were
356 able to complete the 6-week curriculum. Analysis of quantity of components suggests that the
357 intervention was delivered in its entirety to less than half (44%) of participating schools.
358 When outcome data are examined within this context, it can be inferred that motivation to
359 engage with the intervention elements was not the main barrier to students becoming
360 physically active, but rather lack of opportunity to engage with the intervention meant that
361 many students were unlikely to gain the full benefits of the intervention.

362 Other areas of concern were identified in relation to participation in the NECaSP
363 programme. Barriers to completion of the intervention were cited as primarily time and
364 financial constraints pertaining to schools and teaching staff, rather than student lack of
365 motivation to participate. Non-participant schools and schools who did not complete all
366 phases of the programme identified lack of space in an already heavy scheduled syllabi and
367 costs for transportation and staff time as barriers to participation. Although this intervention
368 was piloted¹² and participant schools agreed to implementation plans at the outset, it is clear
369 that many schools required flexibility to implement some elements of the intervention within
370 their constraints and this flexibility needs to be considered in future intervention strategies.

371 Additionally, funding of such interventions should be examined for any ways to
372 accommodate schools with transportation to programme events. If this is not possible, the use
373 of more local community venues is recommended to reduce the amount of travel and
374 financial burden on schools.

375 Overall, the quality of the NECaSP programme was very good. Main findings indicate
376 that students were able to participate in all activities during the programme provided that their
377 school agreed to participate. Communication between stakeholders, sports clubs, schools and
378 participants was an area requiring improvement. Since key outcomes of the NECaSP are to
379 connect students with local sports clubs and to increase PA levels, more information and
380 encouragement should be provided at all phases in order to facilitate an easier transition
381 from school-based activities to community-based activities. Previously mentioned outcome
382 data on low participation by students at follow-up can be explained by this dearth of
383 information¹². Additionally, improved communication with parents on the aims, goals and
384 delivery of this and future interventions is recommended. Previous research has found that
385 parental knowledge and participation in similar interventions has improved PA/sport
386 participation of children¹⁶.

387 **Facilitators**

388 It has been documented that recruitment of a representative number of participants in
389 school-based interventions can be a problem¹⁶. With taster sessions, such as in the NECaSP, a
390 school-based intervention can address the issue of recruitment and maintain high
391 participation rates throughout the intervention. In addition, participant and staff expectations
392 and awareness of an intervention can be good indicators of positive outcomes¹⁷. This is
393 evident in outcome data that showed students perceived themselves to be sportier and
394 healthier following participation in the intervention¹². Heads of PE, ultimately responsible for

395 the delivery of the school based intervention, also believed that the NECaSP met their
396 expectations and was an overall good experience for all.

397 Students suggested further encouragement and understanding from coaches and
398 teachers as a means to help facilitate their sport/PA participation¹⁸, especially those with low
399 PA/sport participation levels. Offering a variety of sports during PE in school, at regular
400 intervals was also seen as a main factor influencing sport/PA engagement in students¹⁶. In
401 fact, the PE and Sport Survey recently reported that only 6% of primary and secondary
402 schools in England completed 3 hours of PE and sport within school time¹⁹. It is
403 recommended that future school based interventions that bridge sports clubs and formal
404 curriculum provision, should consider a more broad approach to the delivery of the
405 programme throughout the academic year, school week and school day. Heads of PE also
406 expressed the need for improved coaching techniques to facilitate the success of the
407 intervention. It has previously been shown that effective coaching techniques can reduce
408 psychological issues during sport/PA such as self-doubt, lack of motivation, and limited
409 coping skills^{20, 21}. Professional development programmes for coaches from local sports clubs
410 should provide more effective learning spaces based on the diverse needs of every student.

411 *Strengths*

412 One main strength of this study is the mixed-methods nature of the process
413 evaluation. The use of qualitative and quantitative methods allowed for a thorough
414 examination of the intervention. Quantitative data regarding the study participants and
415 participation throughout the intervention highlights the need to modify some aspects of the
416 delivery and protocols for the intervention. Moreover, qualitative data provides a richer
417 description of the attitudes and opinions of teachers and parents. Feedback from student
418 participants in their perceived gain from the intervention are crucial to contextualising the
419 barriers and facilitators to engagement in this and future interventions. Additional strengths

420 are the use of various methods of data collection for the triangulation of data and the use of
421 local resources (teachers) for translation of evaluation materials for participants with limited
422 English language abilities.

423 *Limitations*

424 One limitation of this study was reliance on data directly from the intervention
425 administrators and schools. Often missing data was a barrier to data collection processes.
426 Difficulties were seen in attaining follow-up data from students due to the low rate of
427 participants completing the programme. This brings into question whether there are any
428 contextual differences in participants who did not provide feedback. Moreover, obtaining
429 data from parents was a challenge due to their lack of knowledge of the intervention and
430 subsequent disinterest in completing questionnaires.

431 **CONCLUSIONS**

432 One of the major goals of the NECaSP was to increase participation in sports/PA
433 amongst Year 7 students. While the achievement of this goal is important, it is critical that the
434 components of the intervention are practical and easily implemented. As a school-based
435 intervention that employed community-based strategies, the challenges identified in this
436 study are not unique to the NECaSP programme and have been identified in other PA
437 interventions^{22, 23}. The programme, however, managed to recruit successfully and retain
438 participants throughout its duration. This summative process evaluation has identified that
439 further administrative, educational and financial support will help facilitate the success of the
440 programme and its goals for adolescents in East London, and of other similar school-based
441 intervention programmes globally. This evaluation highlighted the need to engage parents
442 with the intervention at early stages to increase likelihood of success in terms of increasing
443 PA/sport participation in young people. Furthermore it has provided a clear framework for
444 future school based interventions targeting hard to reach populations and those experiencing

445 axes of disadvantage such as social class, ethnicity, race, environment¹². Finally, this
446 evaluation has highlighted that changes in the school curriculum can be successful once all
447 parties are involved (community, school, families)²⁴.

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450 study to completion.

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454 **References**

- 455 1. Department of health, physical activity, health improvement and protection
456 (DHPAHIP). *At least five a week: evidence on the impact of physical activity and its*
457 *relationship to health*. London, England: Department of Health; 2004.
- 458 2. Higgins, V & Dale, A. Ethnic differences in sports participation in England. *European*
459 *Journal of Sport and Society*. 2013; 10(3): 215-239.
- 460 3. Department of health, physical activity, health improvement and protection
461 (DHPAHIP). *Start active, stay active: a report on physical activity from the four*
462 *home countries' Chief Medical Officers*. London, England: Department of Health;
463 2011.
- 464 4. Health and social care information centre (HSCIC). *Statistics on obesity, physical*
465 *activity and diet: England 2014*. Leeds, England: HSCIC; 2014.
- 466 5. Flowers, R. *Newham Joint strategic needs assessment, 2011/12- August 2012 update*.
467 London, England: Newham Council; 2012.
- 468 6. Organisation for economic co-operation and development (OECD). *Physical activity*
469 *among children. Health at a Glance: Europe*. Paris, France: OECD; 2012.

- 470 7. Spencer, L. *The perceptions of PE staff on the effect of the London 2012 Olympic*
471 *Legacy on young people's participation in Physical Education in a Gloucestershire*
472 *LA based comprehensive school*. Cardiff, Wales: Cardiff Metropolitan University;
473 2012.
- 474 8. Benn, T & Dagkas, S. The Olympic movement and Islamic culture: Conflict or
475 compromise for Muslim women?. *International Journal of Sport Policy and Politics*.
476 2013; 5(2): 281-294.
- 477 9. activeNewham. *Newham's Every Child a Sports Person: Give sports a go*. London,
478 England: activeNewham; 2013.
- 479 10. Saunders, R.P, Evans, M.H & Joshi, P. Developing a process-evaluation plan for
480 assessing health promotion program implementation: a how-to guide. *Health*
481 *Promotion Practice*. 2005 6(2): 134-147.
- 482 11. Andersen, L.L & Zebid, M.K. Process evaluation of workplace interventions with
483 physical exercise to reduce musculoskeletal disorders. *International Journal of*
484 *Rheumatology*. 2014; 1(1): 1-11.
- 485 12. Curry, W.B, Dagkas, S & Wilson, M. Evaluation of a school-based intervention to
486 promote physical activity and sport among young people aged 11-13 in East London,
487 UK. *Journal of Sports Science*. 2014; 2(1): 181-188.
- 488 13. Griffin et al. Process evaluation design in a cluster randomised controlled childhood
489 obesity prevention trial: the WAVES study. *International Journal of Behavioral*
490 *Nutrition and Physical Activity*. 2014; 11(1): 112-124.
- 491 14. Taylor-Powell, E. *Program development and evaluation, collecting evaluation data:*
492 *direct observation*. Madison, Wisconsin: University of Wisconsin; 1996.
- 493 15. Hsieh, H & Shannon, S.E. Three approaches to qualitative content analysis.
494 *Qualitative Health Research*. 2005; 15(9): 1277-1288.

- 495 16. Jago et al. Adolescent girls' and parents' views on recruiting and retaining girls into an
496 afterschool dance intervention: implications for extra-curricular physical activity
497 provision. *International Journal of Behavioral Nutrition and Physical Activity*. 2011;
498 8(1): 90-100.
- 499 17. Van Marris, B & King, B. *Evaluating health promotion programs*. Toronto, Canada:
500 University of Toronto; 2007
- 501 18. Bailey et al. Physical activity as an investment in personal and social change. *Journal*
502 *of Physical Activity and Health*. 2013; 10(1): 289-308.
- 503 19. Quick, S, Simon, A & Thornton, A. *PE and sport survey 2009/10*. London, England:
504 Department of Education; 2010.
- 505 20. Gearity, B.T & Murray, M.A. Athletes' experiences of the psychological effects of
506 poor coaching. *Psychology of Sport and Exercise*. 2010; 12(3): 213-221.
- 507 21. Roberts, S.J. Teaching games for understanding: the difficulties and challenges
508 experiences by participation cricket coaches. *Physical Education and Sport*
509 *Pedagogy*. 2010; 16(1): 33-38.
- 510 22. Gibson et al. Physical activity across the curriculum: year one process evaluation
511 results. *International Journal of Behavioral Nutrition and Physical Activity*. 2008;
512 5(1): 36-46.
- 513 23. Salmon et al. Reducing sedentary behaviour and increasing physical activity among
514 10-year-old children: overview and process evaluation of the 'Switch-Play'
515 intervention. *Health Promotion International*. 2005; 20(1): 7-17.
- 516 24. Fox, K, Cooper, A & Mckenna, J. The school and promotion of children's health
517 enhancing physical activity: Perspectives from the United Kingdom. *Journal of*
518 *Teaching in Physical Education*. 2004; 23(1): 338-358.

519 25. Data.gov.uk. English Indices of Deprivation 2010-Datasets. 2015. Available at:
520 <https://data.gov.uk/dataset/index-of-multiple-deprivation>. Accessed September 30,
521 2015.

522 **Tables**

523 **Table 1: Summary of process evaluation components**

524

Evaluation Component	Data Collection Instruments	Source	Frequency of Measurement
<i>Quantity</i>			
Number of participating schools	Intervention records	activeNewham staff	Pre & post intervention
Number of participating pupils	Attendance records	Schools	Post intervention
Number of sessions delivered			
Phase 1	Intervention records	activeNewham staff	Post intervention
Phase 2	Intervention records	activeNewham staff	Post intervention
Phase 3	Intervention records	activeNewham staff	Post intervention
Number of sports offered	Intervention records	activeNewham staff	Post intervention
Number of coaches	Intervention records	activeNewham staff	Post intervention
<i>Quality</i>			
Were target participants able to participate?	Attendance records, direct observation, content analyses of email communication	Schools, research team, activeNewham staff	Post intervention
Was communication effective?	Direct observation, content analyses of email communication	Research team, teachers, coaches, activeNewham staff	Quarterly
Was organisation effective?	Direct observation,	Research team, teachers, coaches,	Quarterly

	content analyses of email communication	activeNewham staff	
Evaluation of Intervention			
Expectations & Awareness	Questionnaires	Pupils, parents, teachers	Pre & post intervention (pupils), during intervention(p arents), post intervention (teachers)
Improvements	Questionnaires	Pupils, parents, teachers	Pre & post intervention (pupils), during intervention(p arents), post intervention (teachers)

525

526 **Table 2: Descriptive data on 3 schools who completed 3 phases**

	<u>Full Baseline Sample(n=557)</u>		<u>Sub-sample at Follow-up (n=356)</u>	
	<u>Mean (SD)</u>	<u>%(n)</u>	<u>Mean (SD)</u>	<u>%(n)</u>
Age	11.44(.50)		11.44(.53)	
Sex				
Male		52.80(294)		56.20(200)
Female		43.30(263)		47.20(155)
School				

A	32.73(182)	42.40(151)
B	46.52(259)	29.80(106)
C	20.75(113)	27.20(97)
IMD Quintile*		
1(Least deprived)	.20(1)	.30(1)
2	.40(2)	.60(2)
3	.50(3)	.80(3)
4	14.50(81)	12.70(45)
5(Most deprived)	83.70(466)	85.10(303)
Ethnicity		
White English	8.40(47)	8.10(29)
White British	.90(5)	.60(2)
White Irish	.40(2)	.60(2)
White-Other	12.20(68)	10.40(37)
Asian Indian	7.70(43)	7.90(28)
Asian Pakistani	9.70(54)	11.80(42)
Asian Bangladeshi	22.80(127)	26.10(93)
Asian Chinese	.70(4)	.30(1)
Asian- Other	4.30(24)	4.20(15)
Mixed- Black/Asian/White	3.60(20)	3.40(12)
Mixed- Other	2.20(12)	1.70(6)
Black African	15.60(87)	13.20(47)
Black Caribbean	4.10(23)	4.45(16)
Black- Other	3.90(22)	3.10(11)
Arab	1.80(10)	2.50(9)
Other	1.60(9)	1.70(6)

*Index of Multiple Deprivation²⁵.

