

The role of social capital and community belongingness for exercise adherence: An exploratory study of the CrossFit gym model

Abstract

This is the first study to measure the ‘sense of community’ reportedly offered by the CrossFit gym model. A cross-sectional study adapted Social Capital and General Belongingness scales to compare perceptions of a CrossFit gym and a traditional gym. CrossFit gym members reported significantly higher levels of social capital (both bridging and bonding) and community belongingness compared with traditional gym members. However, regression analysis showed neither social capital, community belongingness, nor gym type were independent predictors of gym attendance. Exercise and health professionals may benefit from evaluating further the ‘sense of community’ offered by gym-based exercise programmes.

Keywords

Community health psychology, social capital, exercise behaviour, physical activity, social support.

Introduction

The long-term health benefits of exercise include reduced mortality rates from chronic illness such as, hypertension (Kokkinos, 2012) and cancer (Friedenreich, 2016) improved movement function in conditions such as arthritis (Macera et al., 2003) and reduced incidence and better management of conditions such as cardiovascular disease and diabetes (Reiner et al., 2013; Warburton et al., 2006). Additionally, exercise has been found to help improve psychological factors such as stress, anxiety and depression (Asmundson et al., 2013; Josefsson et al., 2013; Warburton et al., 2006). The short term benefits of exercise are also recognised, for example, Maher et al. (2013) found that satisfaction with life was improved among a sample of 18-25 year olds on days that they participated in exercise when compared to days they had not exercised.

27

28 Despite the known benefits of exercise, the UK government has highlighted that the UK population is not
29 active enough to achieve a status of good health (Public Health England, 2013). National guidelines for
30 the recommended levels of exercise advise that adults aged between 16-64 years old should participate in
31 at least 150 minutes of moderate-intensity aerobic exercise (e.g. fast walking or cycling) or 75 minutes of
32 vigorous-intensity aerobic exercise (e.g. running) each week. However, it has been reported that only
33 31% of the adult UK population met the NHS (2013) recommendations in 2014 (NatCen Social Research
34 (2015).

35

36 The use of a gymnasium (gym) is one way in which people can increase their exercise levels. Traditional
37 gym-based exercise is the primary method used to increase exercise levels through exercise referral
38 schemes in the UK. The present study examines a novel gym environment, CrossFit, which is fast
39 growing in popularity (Partridge et al., 2014). CrossFit began as a training regime originally founded by
40 Greg Glassman in California, United States of America in the mid-nineties. Since then it has evolved into
41 a trademarked company in the fitness industry with approximately 13,000 CrossFit gym affiliates
42 worldwide. Recently, the UK fitness industry has seen a rise in the number of CrossFit Gyms (CFG)
43 which currently stands at 501 (CrossFit Map, 2016). Distinct differences separate a CFG from a
44 traditional gym (TG). CFGs are ordinarily located within industrial premises in industrial estates with an
45 open plan floor space free from typical exercise equipment such as treadmills; instead, functional style
46 equipment is used to facilitate exercise and the outdoor space is often utilised for exercising. The
47 workouts consist of a variety of strength and conditioning exercises including: free weights, skipping,
48 rowing and running. TGs are ordinarily found in purpose built buildings with modern interiors containing
49 high tech electrically operated exercise apparatus often fitted with sockets for headphones and TV

50 screens. Equipment in a TG includes rowing, cycling and treadmill exercise machines alongside a range
51 of weight based machines and free weights.

52

53 Whilst both types of gym offer a way to increase exercise, some short fallings of gym based exercise have
54 been recognised. For example, drop out from gym-based exercise programs has been shown to be high.
55 Matsumoto and Tekenaka (2004) found that 50% of people joining a gym fitness program will drop out
56 after six months, and Dishman et al. (1985) reported a 20-50% withdrawal of exercise programs in the
57 first five to six months. Explorations into barriers for gym attendance have shown that personal barriers,
58 such as lack of self-efficacy, low body image and poor time control, as well as contextual barriers have a
59 profound influence on poor exercise adherence (Biddle et al., 2015). For example, the gym environment
60 can be perceived as intimidating and not offering many opportunities for social interaction (Williams et
61 al., 2007). Interventions to improve exercise adherence have often focused on influencing individual
62 motivations, using theoretical models such as Self-Determination Theory (Deci and Ryan, 2002). Self-
63 efficacy had been identified as a key factor for predicting (Flora et al., 2015) and improving exercise
64 adherence (Buckley, 2014; McAuley and Blissmer, 2000), with studies demonstrating the positive impact
65 of social support on self-efficacy (Resnick et al., 2002) and ultimately on levels of exercise adherence
66 (Cooper et al., 2015). Nevertheless, to the researchers' knowledge no research has considered how the
67 contextual environment and ethos of the gym itself may encourage social support. Exploring different
68 types of gym models may give some insight into how social support could be facilitated and ultimately
69 how this might impact on exercise adherence. Perhaps, instilling a sense of community or belongingness
70 in a gym setting may influence participation and adherence to exercise.

71

72 The present study explores a unique contextual factor of a CFG, the social environment, by comparison to
73 a TG. There are observable differences in the management of CFGs which may affect the social

74 environment; two examples will be considered, the process of induction of new members and the group
75 exercise program. New CFG members start at the same scheduled opportunity which occurs once per
76 month, they spend six sessions together on a group induction; this gives opportunity to form social
77 relationships. During this phase members are called 'on-rampers' which may give new members a social
78 identity as suggested by Tajfel and Turner's (1986) theory. Additionally, this process may enhance a
79 sense of belonging as suggested by Walton et al. (2012). Another way in which a CFG seeks to enhance
80 the social environment is through the emphasis on group exercising, which has been found to have a
81 positive effect on exercise adherence (Spink and Carron, 1992). Although members are given the
82 flexibility of exercising alone, the programming of a single workout of the day (WOD) encourages
83 members to exercise together during specified times slots throughout the day. Lee and Robins (1998)
84 stated that an environment exhibiting community and promoting increased social interaction, where
85 members have the opportunity to identify with other members, has the ability to strengthen a community
86 environment. CrossFit appears to be grounded in an ethos of community building which may be expected
87 to enable high levels of bridging and bonding social capital. Research surrounding social environments
88 yields interesting findings which can be examined in relation to exercise adherence within gyms. Social
89 support has been shown to be linked to greater self-efficacy and confidence (Molloy et al., 2010) which in
90 turn can lead to increased participation in exercise. Group exercise programs offer greater opportunities to
91 increase social support and create a social community in comparison to individual exercise. Markman
92 (2012) noted that being surrounded by people who share the same goals results in a mutual interest of
93 each other's progress. Social groups, such as belonging to an exercise group or gym, are thought to have
94 the capacity to provide people with a sense of meaning, purpose and affiliation (Haslam et al., 2009)
95 which can lead to positive psychological consequences, such as an increased sense of self-worth (Walton
96 et al., 2012). In addition, when people feel like they belong to a group, they are more likely to participate
97 in adaptive health behaviours (Dowd et al., 2014) and define their sense of self in terms of the groups they

98 associate with as supported by social identity theory (Tajfel and Turner 1986). If people identify with an
99 exercise group then they are more likely to place greater value on that behaviour (Burns et al., 2012). This
100 relationship has also been found to be dynamic. Laverie (1998) discovered that people's decision to join
101 an aerobics class was affected by the perceived social identity that would come as a result of joining, if
102 positive social comparisons were made, they would be more inclined to attend.

103

104 There is currently no research to substantiate the presence of high social capital and community
105 belongingness within a CFG. Internet searches yield a plethora of information which suggests that social
106 support and a community ethos is high within a CFG but it is important to note that the concepts noted are
107 anecdotal and not grounded in empirical research. This will be the first study to explore whether there are
108 higher levels of social capital and community belongingness in CFG members compared with a group of
109 TG members. It is hypothesised that higher levels of social capital and community belongingness will be
110 exhibited by members of a CFG compared to members of a TG. It is also hypothesised that higher levels
111 of social capital and community belongingness are associated with more frequent gym attendance, thus
112 gym attendance will be greater among CFG members when compared to TG members.

113

114

115 **Methods**

116 *Participants*

117 An opportunity sample of one hundred gym members aged between 18 and 69 years were recruited from
118 two different gym types; a CFG ($n=50$, 27 males and 23 females) and a TG ($n=50$, 25 males and 25
119 females). The CFG and the TG were located within 0.5 miles of one another and therefore capture the
120 same socio-demographic area in Cardiff, Wales, UK. Both gyms were equally accessible with similar

121 opening hours and membership prices. The TG was embedded within a fitness centre, which incorporated
122 additional swimming, tennis and cafe facilities as well as a crèche and nursery for childcare. Only
123 members attending the fitness centre for the sole purpose of using the gym were approached to take part
124 in the study. Members under the age of 18 years old were excluded. All of CFG members approached to
125 take part in the study were recruited, however there was a 24% refusal rate for the TG sample.

126

127 *Procedure and design*

128 The study employed a cross-sectional design. A self-report questionnaire was used to collect data about
129 social capital, community belongingness and gym attendance, as well as demographic characteristics, in
130 order to make comparisons between the CFG and TG participants. The questionnaire was piloted on a
131 small opportunity sample to test feasibility, face validity and reliability of the adapted scales. Minor
132 amendments were made based on feedback.

133

134 Recruitment of participants at the two gyms was undertaken using the same standardised format in both
135 locations. Specifically, a suitable area was designated by the gym managers where the researcher could
136 stand and approach potential participants. When approaching participants, the researcher explained what
137 the study involved and the expected time it would take to complete, participants were given an
138 information sheet to consider the research further and then invited to complete the questionnaire. The
139 researcher was available at all times to answer any questions. When finished, participants were thanked
140 for their time. The study was approved by the XXX Ethics Panel.

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143

144 *Measures*

145 *Sample characteristics.* Information was collected on participants' sex, age (categorised into six age
146 brackets, 18-29, 30-39, 40-49, 50-59, 60-69, 70 and above), and how long the participant had been a
147 member at the gym (less than six months, six months to one year, one year to two years and two plus
148 years).

149

150 *Gym related characteristics.* The questionnaire captured how participants spent the majority of their time
151 at the gym (categorised into individual/independent training sessions, group training sessions, or equal
152 amounts of time spent doing individual/independent training sessions and group training sessions).

153

154 *Social capital.* The Internet Social Capital Scale (Williams, 2006) was adapted to measure social capital
155 within a gym context. The original scale comprises 20 items and was developed to measure Putnam's
156 (2000) bridging and bonding constructs. Participants answer each item on a five point Likert scale
157 ranging from one (strongly disagree) to five (strongly agree). This scale exhibits high validity for both
158 bridging (10 items) and bonding (10 items) as distinct concepts and dimensions of social capital
159 (Williams, 2006). In general population samples, the scale has been shown to exhibit high internal
160 reliability ($\alpha=.87-.93$; Pinho and Soares, 2015). The present study included six items from both the
161 bridging subscale and the bonding subscale. Items were included if they were an appropriate fit for the
162 context of the present study and were adapted for use with gym samples (see Table 1). The scoring range
163 for the bonding and bridging subscales was from 6 to 30 and for total social capital the combined range
164 was from 12 to 60. The internal reliability for the adapted scale was $\alpha=0.94$ $\alpha=0.92$ and $\alpha=0.90$ for the
165 bridging, bonding and combined social capital scales, respectively.

166

167 *Community belongingness.* The General Belongingness Scale (GBS) (Malone, Pillow and Osman, 2012)
168 was adapted to measure gym community belongingness within the CFG and TG. The GBS is a 12 item
169 scale which measures feelings of general belongingness across multiple levels of relationships. This is the
170 first time that the scale has been adapted for use in an exercise context. The scale reports high levels of
171 reliability and validity (Malone, Pillow and Osman, 2012) and has been shown to have an internal
172 consistency of $\alpha=.95$ (Cockshaw, Shochet and Obst, 2013). Previous exploratory and confirmatory factor
173 analysis has revealed that the 12 items fall into a two factor structure, acceptance/inclusion and
174 rejection/exclusion which enables participants to report a sense of belonging to the extent that they feel
175 both included and excluded (Malone, Pillow and Osman, 2012). Responses are recorded on a five point
176 Likert scale ranging from one (strongly agree) to five (strongly disagree). Eight items from the scale were
177 included in this study, giving a score range from 8 to 40 (see Table 1 for examples). Items were included
178 if they were judged to fit the context of the research. The internal reliability of the adapted GBS was
179 $\alpha=0.92$.

180

181 *Gym attendance.* The questionnaire used one item to measure gym attendance, ‘during a typical week,
182 how many times do you attend the gym?’ Responses to this question were categorised into one, two,
183 three, four, five, six, seven and seven and above attendances per week. Gym attendance was measured as
184 a proxy for exercise adherence.

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190 **Table 1.** Original and adapted questionnaire items to measure social capital and community
 191 belongingness.

Internet Social Capital Scale (Williams, 2006)	
Original Item	Adapted Item
<i>Bridging Subscale</i>	
Interacting with people online/offline makes me interested in things that happen outside of my town	Interacting with people from the gym makes me interested in things that happen outside of my gym
Interacting with people online/offline makes me want to try new things	Interacting with people from my gym makes me want to try new things
<i>Bonding Subscale</i>	
There are several people online/offline I trust to help solve my problems	There are several people from the gym I trust to help solve my problems
There is someone online/offline I can turn to for advice about making very important decisions	There is someone from the gym I can turn to for advice about making very important decisions
The General Belongingness Scale (GBS) (Malone, Pillow and Osman, 2012)	
Original Item	Adapted Item
<i>Acceptance/inclusion</i>	
When I am with other people, I feel included	When I am at the gym I feel included
I have close bonds with family and friends	I have close bonds with people at the gym
<i>Rejection/exclusion</i>	
I feel like an outsider	I feel like an outsider at my gym
I feel as if people do not care about me	I feel as if people do not care about me at my gym

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196 *Data analyses*

197 Total scores were computed for social capital and the social capital subscales (bridging and bonding) and
198 community belongingness. T-test analyses were used to explore the levels of social capital, community
199 belongingness and gym attendance across the samples. Pearson's correlation analyses were used to
200 explore associations between social capital, community belongingness and gym attendance. A linear
201 regression model was conducted to examine associations between gym type, social capital, community
202 belongingness and gym attendance. Levene's test was used to check the variance for all t-tests conducted.
203 All effect sizes were calculated by hand using the formula $r = \sqrt{t^2 / (t^2 + df)}$ as cited in Field (2009).
204 Benchmarks for effect size are indicated by Field (2009) to be, $r = .1$ for a small effect accounting for one
205 percent of the total variance, $r = .3$ for a medium effect and nine percent variance and $r = .5$ for a large effect
206 accounting for 25% total variance.

207

208 **Results**

209 *Sample characteristics*

210 The sample characteristics are presented in Table 2. As can be seen, a higher proportion of younger
211 members were found in the CFG sample. Chi-square analysis showed a significant association between
212 age and gym type ($\chi^2 = 19.614$, $df(3)$, $p < .001$). Participants from the CFG included more new members
213 (58% had been a member for two years and under), than the TG sample participants (22% had been a
214 member for two years and under) of whom the majority had been a member from more than two years
215 (78%).

216

217

218 **Table 2.** Sample characteristics

	CrossFit gym members (n= 50)	Traditional gym members (n= 50)
Sex		
<i>Male</i>	27	25
<i>Female</i>	23	25
Age		
<i>18-29 years</i>	24	12
<i>30-39 years</i>	21	13
<i>40-49 years</i>	4	15
<i>50 plus years</i>	1	10
Length of gym membership		
<i><six months</i>	4	2
<i>Six months – one year</i>	10	5
<i>One – Two years</i>	21	4
<i>> Two years</i>	15	39
Type of gym activity		
<i>Individual or independent activities</i>	0	28
<i>Group activities</i>	33	13
<i>Mix of individual and group activities</i>	17	9

219

220 *Gym related characteristics*

221 Differences were identified in the way ‘the majority of time was spent at the gym’ between the CFG and
 222 TG samples. The CFG participants were more likely to engage in group training sessions than participants
 223 of the TG. Conversely participants from the TG were more likely to engage in individual/independent
 224 training sessions than participants from the CFG.

225

226 *Social capital and community belongingness*

227 Social capital was found to be significantly higher in the CFG sample (M= 51.6, SE= .755) than in the TG
228 sample (M= 39.3, SE= 1.44), $t(74) = 7.5$, $p=.001$, $r= .65$. The CFG sample also showed significantly
229 higher scores for both subscales of social capital; bridging (M= 27.1, SE= .340) $t(69) = 7.52$, $p=.001$, $r=$
230 $.67$ than the TG sample (M= 21.1, SE= .724); and bonding (M= 24.4, SE= .581) $t(87) = 6.07$, $p=.001$, $r=$
231 $.54$, than in the TG sample (M= 18.2, SE= .842). Additionally, feelings of community belongingness were
232 found to be significantly higher in the CFG sample (M= 37.0, SE= .519) than in the TG sample (M= 30.6,
233 SE= .837), $t(82) = 6.51$, $p=.001$, $r= .58$. All of the effect sizes for these findings were large ($r>.5$). These
234 findings support the hypothesis that significantly higher levels of social capital and community
235 belongingness would be exhibited by people who attend a CFG compared to people who attend a TG. As
236 previously noted there were differences in the ages of participants across the two samples. Consequently,
237 the data were examined to explore whether these age differences may account for the observed
238 differences in social capital and general belongingness scores by gym type. Inferential statistical analysis
239 (such as ANCOVA) was not appropriate as the age category variable was not independent of the gym
240 type variable (Field, 2009). However, the pattern of data demonstrated that ratings for all social capital
241 and general belongingness scores were higher for CFG members compared with TG members for each of
242 the individual age categories, see examples in Figures 1 and 2.

243

244 [Insert Figure 1 and 2]

245

246 *Gym attendance*

247 There was no significant difference in gym attendance between gym types, members of the CFG sample
248 attended the gym marginally more in a week (M= 4.94, SE= .21) than members of the TG sample (M=

249 4.58, SE= .23), $t(98)= 1.134$, $p =.260$. The majority of all participants attended the gym four or five times
250 per week.

251

252 A Pearson's correlation analysis was conducted to establish whether there were significant relationships
253 between attendance and the measures of social capital and community belongingness. Results showed a
254 significant positive correlation between social capital and attendance ($r = .28$, $p=.005$), such that as social
255 capital increases weekly gym attendance also increases. Secondly, a significant positive correlation
256 between attendance and community belongingness was also observed ($r = .27$, $p=.007$). To establish if
257 there was an association with gym type, a linear regression was conducted. This showed that social
258 capital, community belongingness and gym type accounted for six percent of the variance in gym
259 attendance ($R^2 =.063$). An analysis of variance (ANOVA) indicated that the regression model is
260 significantly better at predicting gym attendance than the mean value of gym attendance ($F = 2,436$,
261 $p=.016$). However, neither social capital ($b = .22$, $p> .05$), community belongingness ($b = .16$, $p> 0.05$),
262 or gym type ($b = .10$, $p> .05$) were found to be independent significant predictors of gym attendance.
263 Therefore, despite support for the hypothesis that higher levels of social capital and community
264 belongingness are related to higher gym attendance, the hypothesis that CFG members would have higher
265 gym attendance than TG members was not supported.

266

267 **Discussion**

268 The present study is the first to compare social capital and community belongingness in relation to two
269 gym types; a CrossFit gym and a traditional gym. As expected, based on the ethos of CrossFit, levels of
270 group exercise were found to be higher within the CFG compared to the TG where individual exercise
271 was most common. It was hypothesised that the group exercise model and process of group induction of
272 new members in the CFG would be represented by higher levels of social capital and community

273 belongingness within the CFG sample compared to the TG sample. The results supported these
274 hypotheses with CFG members reporting significantly higher levels of social capital on both the bridging
275 and bonding subscales of social capital as well as significantly higher levels of community belongingness.
276 This finding suggests that the group exercise model and group induction process within the CFG may
277 provide greater opportunity for diverse social networking (bridging) as well as opportunity for deeper
278 friendship development (bonding) compared to the TG. It could therefore be argued that the group
279 exercise model offered in the CFG may provide an environment more open to social interaction and
280 feelings of social identity. It should also be acknowledged that it may also be true that individuals who are
281 more open to social interaction are more attracted to the CrossFit gym model.

282

283 Based on existing research suggesting that a lack of social support is linked to drop out from exercise
284 (Williams et al., 2007), in addition to evidence that belonging to a socially supportive group increases
285 adaptive health behaviours (Dowd et al., 2014), it was predicted that members of the CFG would have
286 higher attendance rates than members of the TG. However, a significant difference was not found in gym
287 attendance between the two samples meaning that this hypothesis was unsupported. An explanation for
288 this finding could be that previous research such as Williams et al. (2007) was conducted on sample of
289 non-exercisers up taking exercise as a new behaviour change, whereas the participants in this study were
290 already active gym members. In addition, Williams et al's participants experienced recognised co-
291 morbidities which could have influenced dropout rates.

292

293 Participants in the present study were asked to record how long they had been a member of their
294 respective gyms. Results showed that a higher number of participants from the TG had memberships for
295 more than two years whereas the CFG had a higher amount of newer members. Based on this finding it
296 could be argued that the TG members had a longer time to engage in social capital and community

297 building opportunities and yet TG members reported lower feelings of social capital and community
298 belongingness than CFG members. Conversely, differing age distributions were apparent among the two
299 samples, the TG participants were found to be older than the CFG participants. Lifespan research suggests
300 that younger adults typically work harder at building social networks whilst older generations are more
301 likely to narrow their social networks (Sigelman and Rider, 2012). Therefore, it could be suggested that
302 the younger sample seen in the CFG are more open to social interactions than the older sample of the TG.
303 The unbalanced age distribution of the CFG and TG sample highlights a limitation of the research.
304 However, the pattern of data suggest the differences in social capital and belongingness scores exist even
305 when comparing within each age category. Further investigation is needed to confirm whether age is a
306 mediating factor in the relationship between gym type and levels of social capital and belongingness. The
307 differences in age distribution may be a reflection of the type of exercise offered or the facilities available
308 (e.g. a crèche is available at the TG). This study did not aim to explore the factors underlying the choice
309 of gym or how this impacted on feelings of belongingness but simply aimed to observe whether
310 differences in community belongingness exist. Exploring the reasons underlying the choice of gym would
311 be a useful area for future study.

312

313 Positive correlations were observed between gym attendance and the measures of social capital and
314 community belongingness. A linear regression was conducted to establish whether gym type along with
315 social capital and community belongingness was a predictor of gym attendance. Only 6% of the variance
316 in gym attendance was accounted for by social capital, community belongingness and gym type,
317 indicating that 94% of the variation in gym attendance cannot be explained by these three factors and
318 other variables are influencing gym attendance. The present research has considered belongingness as a
319 key differentiator between the CFG and TG models but recognises that many other differences are present
320 between the two models which may account for other variance in the prediction of gym attendance.

321 Individual factors in motivation, and other personal barriers and facilitators may account for some of this
322 variance (Biddle et al., 2015); unfortunately limitations in the sample size of this study prevented
323 mediation analyses to explore the effect of motivation. There is also scope for future research exploring
324 the novel gym environment of a CFG such as differences in the physical environment of the two gym
325 types. For example, there are abundant mirrors present in TGs whereas CFGs do not usually contain
326 mirrors; previous research suggests that exercising in front of mirrors can have a negative impact on
327 feeling states in women (Martin-Ginis and Jung, 2003) and increased self-focus and higher body image
328 concerns (Katula, McAuley, Mihalko and Bane, 1998).

329

330 This study was the first to empirically investigate differences in social capital and belongingness between
331 different gym types. As an exploratory study with a cross-sectional design and a relatively small sample,
332 the conclusions are limited to associations. Nevertheless, the higher levels of social capital and
333 belongingness felt by CFG members suggest the potential for further research. Experimental research
334 would help establish cause and effect relationships rather than associative relationships between social
335 capital, community belongingness and gym attendance as seen in the present cross-sectional design. The
336 CFG and TG participating in this research were in close proximity to each other and with similar
337 membership fees suggesting that the socioeconomic catchment for participants was the same; however, a
338 limitation of the study was that no socioeconomic data were collected from the participants. Another
339 limitation of the study was that participants were recruited from only one example of a CFG and one TG,
340 thus the generalisation of these findings to other CFGs and TGs is limited. Future research could recruit
341 participants from a range of CFGs and TGs to see if the findings of the present research can be
342 generalised to other examples of these gym types.

343

344 This study is the first piece of research to provide support for the claim that the CrossFit gym model may
345 offer a greater level of community ethos compared with a traditional gym. Specifically, members of a
346 CrossFit gym had higher levels of social capital and feelings of community belongingness than members
347 of a similar traditional gym. However, given the exploratory nature of this study further research is
348 needed to investigate the impact of the social context of gym-based programmes on exercise adherence.
349 For example, it would be useful to evaluate how a 'sense of community' might affect motivation or self-
350 efficacy in gym members and the subsequent impact on exercise adherence. Given the high dropout rates
351 for gym-based exercise programmes, the present study and future related research could be invaluable in
352 efforts to support individuals to adhere to exercise in the long term.

353

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