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2 **The association of golf participation with health and wellbeing: A comparative study**

3 **Location of study:** Abertay University and ukactive Headquarters

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24 Abstract

25 Golf participation is comprised of activities likely to be beneficial to a golfer's health
26 and wellbeing, including regular walking and social interactions. This study aimed to use a
27 questionnaire to compare physical activity, social trust and personal wellbeing of golfers with
28 National statistics. Furthermore, the study aimed to measure the association between golfers'
29 physical activity levels and self-efficacy for both golf and general exercise participation.
30 Results demonstrated that golfers reported significantly different physical activity levels in
31 comparison to the population of England. Golfers scored significantly higher on social trust
32 and personal wellbeing compared to the population of the UK and England respectively. Golf
33 and exercise self-efficacy were significantly associated with physical activity. The findings of
34 the study demonstrate that, despite golfers having relatively lower levels of physical activity,
35 golf participation is associated with psychological wellbeing. Coaches, golfers and others
36 promoting golf participation may benefit from the results of this study due to an increased
37 awareness of the possible benefits of golf participation.

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39 **Key Words:** Golfer, Physical activity, Social trust, Self-efficacy, Personal wellbeing

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45 Introduction

46 Increasing sports participation remains a collective theme of governments and sport
47 governing bodies around the world, and is often seen as a mechanism to guide children and
48 adults along a pathway to an active lifestyle (Moeijes et al., 2019). Recreational sports offer
49 the opportunity to increase physical activity (PA) levels and improve personal wellbeing,
50 however, in many sports such as football, participation levels often decline with age
51 (Bélangier, Townsend, & Foster, 2011). This is often attributed to the physical demands or
52 accessibility of certain sports (Bélangier et al., 2011) but unlike many other recreational sports,
53 golf remains popular across varying age groups (Hillier Hopkins LLP, 2016). This may relate to
54 golf's necessity to walk for only short intervals at a time, or indeed to be able to use a golf
55 buggy, thus allowing individuals with a wider degree of mobility and fitness to be able to
56 access and participate in the sport (Murray et al., 2017). Research has also shown that social
57 aspects make golf appealing to many age groups and are key to both perseverance in
58 participation and building up and maintaining social connection or trust (Stenner,
59 Mosewich, Buckley, & Buckley, 2019; Stenner, Mosewich, & Buckley, in press; Wood &
60 Danylchuk, 2011). However, few studies have examined PA levels, social trust and personal
61 wellbeing of individuals while participating in golf.

62 Physical activity of moderate (or higher) intensities of effort has been shown to
63 provide physical and mental health benefits as well as contribute towards longevity
64 (O'Donovan et al., 2010). The current UK recommendations for PA is that all healthy adults
65 should partake in at least 150 minutes of PA, which can be accumulated in bouts of any length,
66 and can be achieved in one or two sessions per week (UK Chief Medical Officers' Physical
67 Activity Guidelines, 2019). In addition, new evidence suggests that short duration, very

68 vigorous PA at lower levels than 75 minutes per week can achieve similar health benefits to
69 those derived from previous guidelines (O'Donovan et al., 2010). PA research also suggests
70 that at least twice per week, adults should undertake activities targeted towards increasing
71 or maintaining muscular strength (UK Chief Medical Officers' Physical Activity Guidelines,
72 2019). While these PA guidelines have been recently published (UK Chief Medical Officers'
73 Physical Activity Guidelines, 2019) they have similarities to previously published PA guidelines
74 (O'Donovan et al., 2010). According to the Active Lives Survey (2015 – 2016), 62% of adults
75 met the PA recommendations at the time of the survey. Across the population in England, at
76 the time of the Active Lives Survey (2015 – 2016), the level of males meeting guidelines
77 reduces with age, dropping from 76% in 16-24 year olds to 60% in 65-74 year olds. For
78 females, 66% in the 35-44 age category meet the current PA guidelines.

79 A distinction between golf in comparison to other sports is participation is higher in
80 middle-aged and older adults (Ainsworth et al., 2011; Murray et al., 2017). Therefore, golf
81 may offer an excellent example of a moderate intensity activity for older populations
82 (Ainsworth et al., 2011), although it is important to note dispute amongst the literature, with
83 categorisations ranging from light to moderate-vigorous (Luscombe, Murray, Jenkins, &
84 Archibald, 2017). Nevertheless, UK statistical reports have classified golf as moderate-
85 intensity (e.g. British Heart Foundation, 2015) and for comparison we will use this
86 categorisation in the present work.

87 Social trust is a belief in the honesty and integrity of other human beings. Having
88 confidence in the trustworthiness of others is a fundamental aspect of social capital and plays
89 an important role in how well societies function (Justwan, Bakker, & Berejikian, 2018).
90 Measures of trust from attitudinal surveys globally have demonstrated how interpersonal
91 trust – defined as one's willingness to accept vulnerability based on the expectation regarding

92 the behaviour of another party that will produce some positive outcome in the future - is a
93 key contributor to wellbeing (Krueger & Meyer-Lindenberg, 2019). In the UK, levels of social
94 trust have generally remained stable over the last two decades. However, very few research
95 studies on social trust have been conducted in the sport domain, including golf (Elmose-
96 Østerlund & van der Roest, 2017).

97 Wellbeing is defined as experiencing a state of physical, psychological, and social
98 health (Diener, Pressman, Hunter, & Delgado-Gil, 2017). It is a multifactorial construct
99 that is measured in different ways, with subjective wellbeing including having good mental
100 health, high life satisfaction, low anxiety, and a sense of purpose. In the UK, the Measuring
101 National Wellbeing programme replaced “subjective wellbeing” with “personal wellbeing”
102 after it was found it was easier to understand (Office for National Statistics, 2018). Personal
103 wellbeing is also associated with health. For example, increased wellbeing is associated with
104 a reduced risk of stroke, heart attacks, diabetes, disability and premature mortality (Vasan &
105 Sawyer, 2017). In the sport and exercise domain, research on personal wellbeing has
106 increased significantly in recent years. Sport and vigorous recreational activity has
107 consistently been found to be positively associated with wellbeing across different ages,
108 independent of gender and socioeconomic status (Wicker, Coates, & Breuer, 2015). Recent
109 research has also demonstrated the benefits of participation in golf and mental
110 health/wellness (Breitbarth & Huth, 2019; Murray et al., 2017; Murray et al., 2019), but these
111 researchers suggest further studies in this area are required as the weight of evidence is low.

112 Sporting Future, the UK Government’s sport strategy, focuses on how sport can make
113 a contribution to individual development through increased levels of perceived self-efficacy
114 (Department for Digital, Culture, Media and Sport, 2015). Self-efficacy, linked to self-
115 confidence, refers to an individual’s belief in their capability to carry out a course of action or

116 actions (Bandura, 1977). For example, a golfer with a higher level of self-efficacy will be more
117 likely to play regularly as they have a belief they will benefit through better performances or
118 improved physical, psychological or social related health factors. It is proposed that four
119 elements are effective at promoting self-efficacy and have been used to inform behaviour
120 change interventions (Gainor, 2006). These are; successful performance (experience of prior
121 success), vicarious experience (an individual should have a model performance to copy),
122 verbal persuasion (encouraging statements from experts, peers or relatives) and emotional
123 arousal (beneficial with positive emotions, an adverse effect may occur with negative
124 emotions). Regular PA has been shown to reduce the risk of physical illnesses and improve
125 mental wellbeing (Harris, 2018). Those with higher levels of self-efficacy are more likely to
126 adhere to exercise (McAuley et al., 2011). Conversely, those with lower levels of self-efficacy
127 are more likely to drop out of exercise interventions and not complete the same amount of
128 exercise prior to drop-out. There is substantial evidence supporting the link between higher
129 levels of PA and higher levels of self-efficacy (Kwan & Bryan, 2010). The social nature of golf
130 may also play a role in the self-efficacy of an individual as this may influence the verbal
131 persuasion element in promoting self-efficacy. Whilst the link between physical activity and
132 self-efficacy is well established, there remains a lack of research into specific sports, including
133 golf, and their impact on self-efficacy.

134 In order to better understand the PA levels, social trust, personal wellbeing and self-
135 efficacy of golfers, the aim of the study was to compare PA levels of golfers to the wider
136 English population estimated from the 2016 Sport England Active Lives Survey. This data set
137 was selected as the question and benchmarks were similar and the data was collected within
138 a similar time frame to the current study. The study also aimed to compare social trust levels
139 of golfers with the UK population using figures from within the 2016 European Social Survey.

140 In addition, the study aimed to compare golfers' personal wellbeing to the 2016 Sport England
141 Active Lives Survey. Finally, the study aimed to measure the association between golfers' PA
142 levels and their self-efficacy for golf participation as well as exercise participation. It was
143 hypothesised that golfers' PA and social trust levels would be significantly greater when
144 compared to national population statistics. It was also hypothesised that golfers' personal
145 wellbeing would be significantly greater when compared to the England population. Finally,
146 it was hypothesised that golfers' PA levels would display a significant association when
147 compared to self-efficacy for golf and exercise participation.

148 **Methodology**

149 The survey data was collected by the ukactive Research Institute in 2016 and consisted
150 of two parts. The first part related to demographic data and the second related to questions
151 on PA, wellbeing, social trust and self-efficacy. The demographic questions were obtained in
152 order to gain an understanding of the characteristics of golfers. A total of 3,247 golfers,
153 participating at 12 local authority golf courses in England, completed and signed these surveys
154 as part of the current study. The age range of golfers who participated in the study spanned
155 16 to 91 years ($M = 53$, $SD = 17$). In addition, 97% of golfers were male and 3% were female.
156 Of the golfers who completed the survey, 96% were White or White British, 2% were Asian or
157 Asian British, 1% were Black or Black British and 1% were mixed. Finally, 96% of golfers did
158 not disclose a disability and 4% stated that they did. All golfers indicated that they were
159 members of their respected courses at the time data was collected for the study.

160 In order to measure PA levels, a modified single-item minute based activity levels
161 question (Milton, Clemes, & Bull, 2013) was asked: "In the past week, how much moderate
162 intensity PA have you completed in total?", with golfers answering either: 1) Under 30 mins;

163 2) 31-90 mins; 3) 91-149 mins; or 4) 150+ mins. By asking this question, it enabled the
164 researchers to use the Chief Medical Officers' activity guidelines for weekly activity to group
165 adults into the following categories: active, insufficiently active and inactive (British Heart
166 Foundation, 2015). Golfers participating in 150+ mins of PA per week were classed as active,
167 golfers participating in 31-149 mins of PA were classed as insufficiently active, whereas golfers
168 undertaking under 30 mins of PA per week were classed as inactive (British Heart Foundation,
169 2015). In order to compare golfers' PA levels to the population of England, the results of the
170 2016 Sport England Active Lives Survey were used. This data set was selected as the question
171 and benchmarks were similar and the data was collected within a similar time frame to the
172 current study. A two-sided proportion test was used to compare golfers' physical activity
173 levels with the rest of England and $p < .05$ was considered significant for this comparison in
174 addition to 95% confidence intervals reported for the difference in proportions (where
175 negative values indicated the sample was lower compared to the Active Lives Survey data).

176 The second part of the survey focused on social trust, personal wellbeing and self-
177 efficacy. Specifically, golfers' social trust levels were determined by asking about their
178 interpersonal trust: "Generally speaking, would you say that people can be trusted or that
179 you need to be very careful in dealing with people?". This question was developed by the
180 Office of National Statistics (ONS) and was scored on an 11-point Likert scale ranging from '0-
181 Definitely cannot be trusted' to '10- Definitely can be trusted'. In order to compare golfers'
182 social trust to the rest of the UK, the results of the 2016 European Social Survey (ESS, 2016)
183 were used. In order to measure group standard deviations from the 2016 European Social
184 Survey 95% confidence intervals were used. Following the calculation of group means and
185 standard deviations for social trust, an independent T-Test was used to compare these
186 measures between golfers and the UK population and $p < .05$ was considered significant for

187 this comparison. For between-groups comparisons, effect sizes (Cohen's d) were calculated
188 using a calculator developed by the RStats institute (<http://www.missouristate.edu/rstats/>).

189 In order to measure personal wellbeing, the survey included the Active Lives personal
190 wellbeing life satisfaction question: "Overall, how satisfied are you with your life nowadays?".
191 Data from between May 2016 - May 2017 of the Active Lives report was used to compare the
192 England population to golfers within the current study. This data set was selected as the data
193 was collected within a similar time frame to the current study. As was the case for social trust,
194 means were compared using independent T-Tests with a threshold $p < .05$ and reporting of
195 Cohen's d effect sizes for between-groups comparisons.

196 In order to measure self-efficacy, two questions were developed: "How sure are you
197 that you will exercise regularly during the next year?" and "How sure are you that you will
198 play golf regularly during the next year?". Personal wellbeing and self-efficacy questions were
199 measured on an 11-point Likert scale (0-10), where 0 is 'Not at all sure' and 10 is 'Very sure'
200 meaning that a higher score related to higher wellbeing and self-efficacy. In order to examine
201 golfers' self-efficacy, golfers were split into three groups (active, insufficiently active and
202 inactive) based on their PA levels. Following this split, differences were measured between
203 the three group categories: active, insufficiently active and inactive. Statistical differences
204 were measured using a Kruskal-Wallis test with a threshold of $p < .05$. A comparison was also
205 measured between golf participation and exercise participation self-efficacy within golfers'
206 PA groups. These comparisons were measured using paired sample T-Tests with a threshold
207 $p < .05$ and reporting of Cohen's d for within-groups comparisons.

208

209 **Results**

233 **** Insert Figure 2 near here ****

234

235 Comparing personal wellbeing scores, golfers had a significantly higher ($t(57286) = 18$,
236 $p < .001$, $d = .17$) mean score ($M = 7.63$, $SD = 1.87$) than the population of England ($M = 7.04$,
237 $SD = 3.56$). Of golfers who completed the personal wellbeing question, 78% scored 7 or higher,
238 and 18% of golfers scored their personal wellbeing as the maximum response of 10 (Figure
239 3).

240

241 **** Insert Figure 3 near here ****

242

243 When examining golfers' PA levels, split into active, insufficiently active and inactive
244 groups, and self-efficacy for exercise participation scores, there was a statistically significant
245 difference between all PA groups ($t(617) = 2$, $p < .001$). When examining golfers' PA levels and
246 self-efficacy for golf participation scores, there was a statistically significant difference
247 between all PA groups ($t(131) = 2$, $p < .001$).

248 Following a paired samples T-Test to measure differences within PA groups, significant
249 differences were observed when comparing exercise participation ($M = 8.95$, $SD = 1.50$) and
250 golf participation ($M = 8.38$, $SD = 2.00$) self-efficacy within the active group ($t(879) = 8$, $p <$
251 $.001$, $d = .32$) (Figure 4). No significant differences were observed when comparing exercise
252 participation ($M = 7.58$, $SD = 2.00$) and golf participation ($M = 7.59$, $SD = 2.16$) self-efficacy
253 within the insufficiently active group ($t(1775) = 0$, $p < .872$, $d = .01$) (Figure 4).

254 **** Insert Figure 4 near here ****

255

256 **Discussion**

257 The study aimed to compare PA and social trust levels of golfers to the Active Lives
258 Survey and national activity statistics, respectively. Secondly, the study aimed to compare
259 golfers' personal wellbeing to the population of England. Finally, the study aimed to measure
260 the association between golfers' PA levels and their self-efficacy for golf participation as well
261 as exercise participation. In summary, the findings demonstrate that golfers reported
262 significantly different PA levels, when categorised as active, insufficiently active and inactive,
263 in comparison to the general population. Golfers scored significantly higher on interpersonal
264 trust and personal wellbeing compared to the general population. Golf and exercise
265 participation self-efficacy was also significantly associated with golfers' PA levels, meaning
266 golfers in the active group for PA (150+ mins per week) may be more likely to participate in
267 golf and exercise in the future.

268 Results demonstrate that golfers self-reported lower PA in comparison to the general
269 population and therefore our hypothesis was rejected for this measure. Only 29% of golfers
270 considered themselves to partake in 150 minutes of exercise or more and therefore classified
271 as active, this is approximately half of that reported in the general population (Active Lives
272 Survey, 2016). The majority of golfers identified themselves as insufficiently active (60%) in
273 comparison to 12% for the general population but only 11% of golfers consider themselves
274 inactive compared with 26% of the general population (Active Lives Survey, 2016). These
275 results may partly be explained by the participants' perception of whether golf can be
276 considered a moderate intensity exercise and by the phrasing of the question in the present
277 study. Literature suggests that for older populations golf does offer a moderate intensity

278 activity (Ainsworth et al., 2011). When values for percentage of heart rate max are considered
279 in previous literature golf is considered light (50 – 63%) or moderate intensity (64 – 76%)
280 (Luscombe et al., 2017). Categorisation may somewhat be dependent on age of the
281 participant, with intensity of effort required increasing alongside age and likely decreasing
282 physical capacity. Previous research has shown golf has an energy expenditure that achieves
283 the America College of Sports Medicine’s recommendation of 1000 kcal week⁻¹ (Tangen et al.,
284 2013) and therefore the golf population may have misinterpreted as to whether golf should
285 have been included as PA.

286 Although recent literature outlines that golf can provide moderate intensity PA at
287 times, the complication is that it will primarily be low intensity PA with different intensities
288 observed likely during the game (Ainsworth et al., 2011; Luscombe et al., 2017; Murray et al.,
289 2017) making it hard for golfers to self-categorise the actual intensity. However, the low
290 intensities observed may be compensated for by the duration of the game and therefore offer
291 a viable sport to achieve PA recommendations. Implications for those involved in promoting
292 golf participation (specifically coaches and development officers) could be increasing the
293 awareness of the potential benefits of golf participation and promote it as a form of exercise
294 to their target groups. The most recent UK Chief Medical Officer Physical Activity Guidelines
295 (2019) published may assist with this. This is because example activities of what constitutes a
296 moderate activity have been included and this encompasses brisk walking, which is involved
297 in golf (UK Chief Medical Officers' Physical Activity Guidelines, 2019).

298 The hypothesis that self-efficacy would be higher in those with increased participation
299 in both the exercise and golf groups can be accepted based upon our findings. This is in line
300 with previous research (Kwan & Bryan, 2010) showing that levels of self-efficacy are increased

301 in those with higher levels of PA participation. Those who believe they will exercise regularly
302 and those who believe they will golf regularly, had the highest levels of self-efficacy. There
303 was also a significant difference across the three participation categories (active, insufficiently
304 active and inactive) for both exercise and golf participation. This suggests that even
305 insufficient amounts of exercise or golf is more beneficial than levels associated with the
306 inactive category with regard to self-efficacy levels. These results provide further support for
307 the hypothesis that self-efficacy is positively related to participation in PA. As with the scores
308 in the PA section, there is however a discrepancy reported between golf and exercise, with
309 the most surprising result appearing in the inactive category. The underlying reasons for this
310 discrepancy could be investigated in further research as golf does require physical exertion.
311 Golf has physical health related benefits due to the high volume demands of a round,
312 particularly when carrying a bag (Zunzer, von Duvillard, Tschakert, Mangus, & Hofmann,
313 2013). The results also show that those who believe they will participate in golf regularly will
314 also report themselves as participating in other forms of exercise regularly outside of a golf
315 setting. This is very positive as the physical, mental and social benefits of various types of
316 exercise are well documented (O'Donovan et al., 2010). As noted above, golf coaches are in
317 an ideal position to help raise awareness of golf as a viable form of exercise. The current study
318 used two items regarding future participation on an 11-point Likert scale. This type of
319 measure is validated in a cardiac rehabilitation setting based on past participation (Everett,
320 Salamonson, & Davidson, 2009) but within the field self-efficacy is often measured using a
321 variety of different scales. Similar studies in sport and exercise settings use a 7 point (Kwan &
322 Bryan, 2010) Likert scale based to measure self-efficacy. Using such a measure in future would
323 allow for direct comparison to existing research.

324 The results in relation to social trust revealed differences between golfers and the
325 general UK population, as hypothesised. The findings provide a novel insight into golfers, who
326 scored significantly higher on a measure of interpersonal trust. This understanding helps
327 expand previous research, which has focused on the relationship between social trust and
328 volunteering in sports clubs (e.g., Elmoose-Østerlund & van der Roest, 2017) and research
329 emphasizing the social nature of golf (e.g., Stenner et al., 2019; Stenner et al., in press. It also
330 has theoretical and applied implications. Because golfers are required to record their own
331 scores and call penalties on themselves they may develop a greater believe in the honestly
332 and integrity of others (Brunelle, Danish, & Forneris, 2007). The unique aspect to the sport of
333 golf may help explain the significant number of golfers who scored 7 or higher on the
334 interpersonal trust measure. Given the importance of social trust in society and as a key
335 contributor to wellbeing, future research is required on how social trust is developed among
336 golfers. From an applied perspective, coaches can help protect and grow social trust further
337 by educating all golfers, especially younger populations, on the importance of honesty and
338 integrity in golf.

339 Personal wellbeing was significantly higher in golfers compared to the UK population,
340 as hypothesised. However, the small effect size indicates that the difference in personal
341 wellbeing was small. Playing golf can also produce relatively higher levels of life satisfaction
342 when compared to other sporting and leisure activities performed at a moderate intensity in
343 the UK (Wheatley & Bickerton, 2017). The added benefit of wellness in golfers compared to
344 other leisure activities can be related to type of activity golfers undertake, and this can be
345 promoted to participants by coaches. Golfers typical utilise the time to play with friends and
346 colleagues during their leisure time, thereby creating and nurturing social relations. Golf is

347 also played outdoors in a natural green environment, which has been found to further
348 promote personal wellness (Bowling, Eschleman, & Wang, 2010).

349 Although the study presents insightful findings in relation to golfers' health and
350 wellbeing compared to the UK and England populations, it is important to understand the
351 limitations of the current study. Although the results of the study demonstrate that golfers
352 had reduced PA in comparison to England's population, it is important to highlight that
353 specific forms of PA were not defined within the questionnaire, therefore golfers may have
354 been unsure if golf participation was classified as moderate PA. Future research should clearly
355 define if golf participation is a form of moderate PA. Levels of PA are dependent on the age
356 range of the investigated group (Ainsworth et al., 2011). In addition, the current study used
357 two items regarding exercise self-efficacy on an 11-point Likert scale. In future, it is
358 recommended that a more global, cited measure of self-efficacy is used in order to draw
359 greater comparisons with previous research and UK population data sets. Furthermore, the
360 current study is limited to measuring interpersonal trust. There are many different aspects of
361 social trust, including interpersonal trust, therefore it may be beneficial for future studies to
362 measure other aspects of social trust (e.g., the potential links between social trust and
363 longevity). Specifically, research is also needed in relation to potential social benefits, as
364 recent reviews have highlighted a lack of social interaction being a significant health risk
365 factors among older adults (Fakoya, McCorry, & Donnelly, 2020). In terms of wellbeing, the
366 current study's questionnaire focused on the satisfaction aspects of personal wellbeing, so it
367 remains unknown as to whether the golfers also had good mental health, low anxiety, and a
368 sense of purpose. Finally, it should be noted that this represents a cross-sectional comparison
369 meaning causality cannot be established due to possible confounders and indeed the
370 potential for reverse causality i.e. those with low PA and high social trust and wellbeing were

371 more likely to participate in golf. Future work should seek to examine the implementation of
372 golf-based interventions to determine whether they can produce changes towards improved
373 health and wellbeing.

374 In summary, only 29% of golfers considered themselves to partake in 150+ minutes of
375 exercise per week, meaning 71% of golfers completing the questionnaire were considered
376 insufficiently active or inactive, which is considerably higher than the 38% of the population
377 of England that are within these two categories. On a positive note, golfers' self-efficacy levels
378 for both golf and exercise were positively associated with PA levels. This is in line with existing
379 literature that highlights the effect of exercise on self-efficacy, but suggests that golf
380 participation may have a positive effect on self-efficacy. This relationship has not been
381 investigated in other studies and could be investigated further in other contexts. The study
382 also concludes that golfers rated their social trust to be significantly higher than that of the
383 UK population, which is another potentially positive aspect of golf participation. Similarly,
384 golfers' personal wellbeing was significantly greater than the population of England, which
385 further highlights the benefits that golf participation may promote for participating
386 individuals. Implications for golf coaches and others promoting golf participation have been
387 highlighted. In conclusion, the current study has provided a greater understanding of the
388 benefits that golf participation may have on the health and wellbeing of engaging individuals.

389

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501 **Figure Captions**

502

503 **Figure 1:** The percentages of active, insufficiently active and inactive golfers compared to the
504 England population within the 2016 Sport England Active Lives Survey (* indicates significant
505 difference $p < .001$).

506

507 **Figure 2:** Golfers' average social trust score (Mean \pm Standard Deviation), answered on an 11-
508 point Likert scale (0-10), compared to the average social trust score of the UK population (*
509 indicates significant difference $p < .001$).

510

511 **Figure 3:** Golfers' average personal wellbeing score (Mean \pm Standard Deviation), answered
512 on an 11-point Likert scale (0-10), compared to the average England population personal
513 wellbeing score. (* indicates significant difference $p < .001$).

514

515 **Figure 4:** Golfers' average self-efficacy score (Mean \pm Standard Deviation), answered on an
516 11-point Likert scale (0-10), in relation to exercise participation and golf participation when
517 grouped as active, insufficiently active and inactive for PA (* indicates significant difference
518 $p < .001$).

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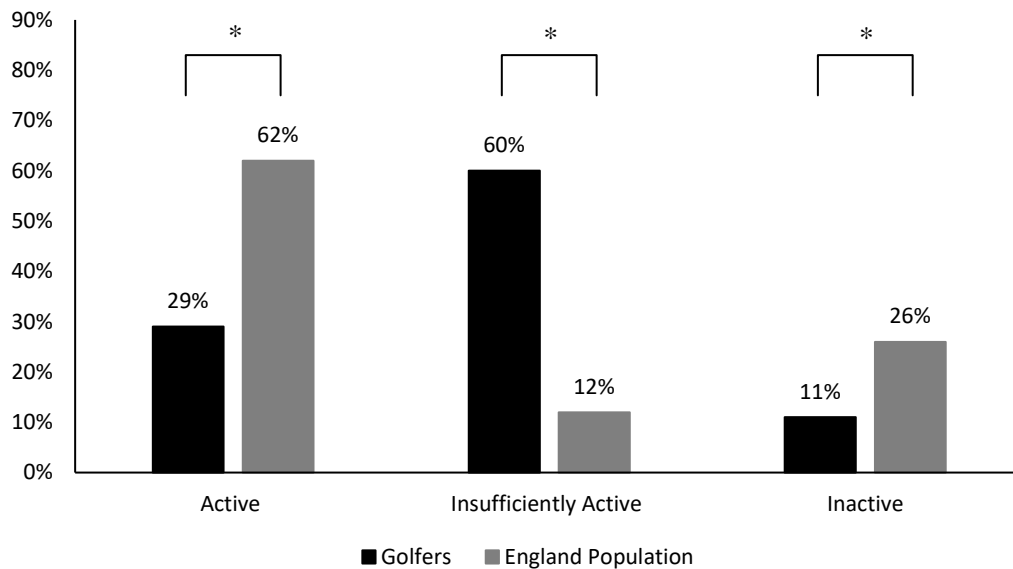
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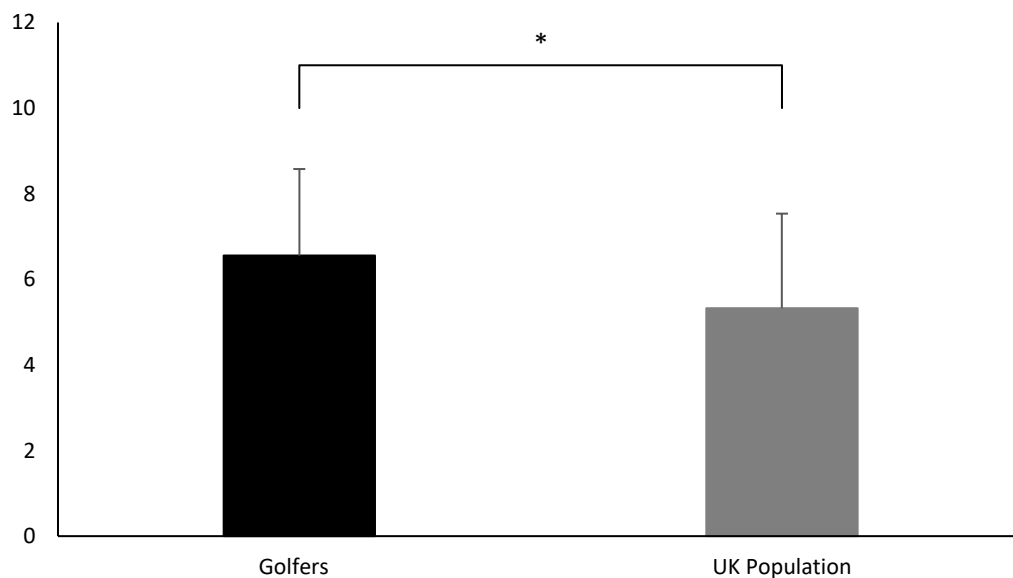
526 **Figures**

527 **Figure 1**



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529 **Figure 2**



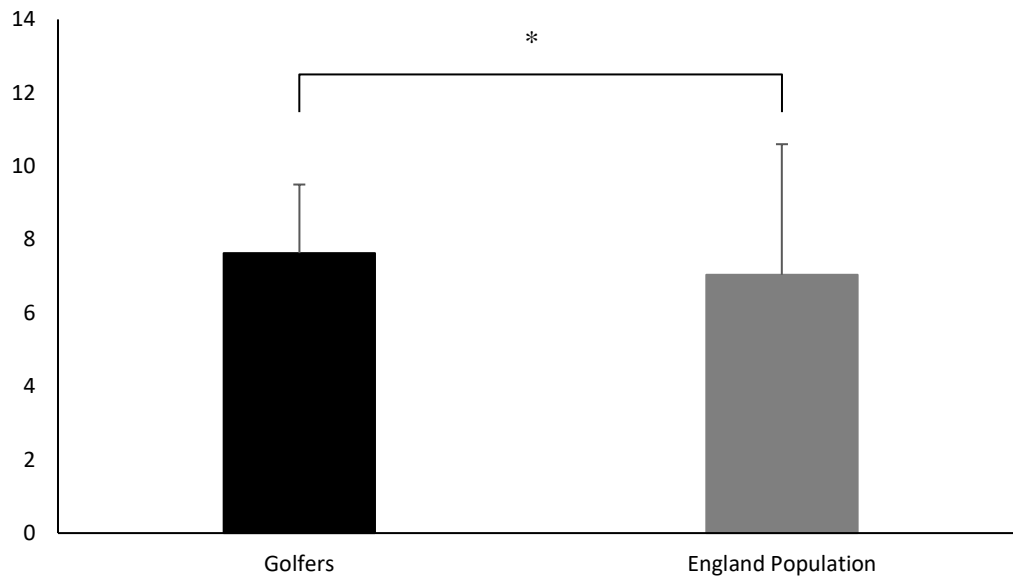
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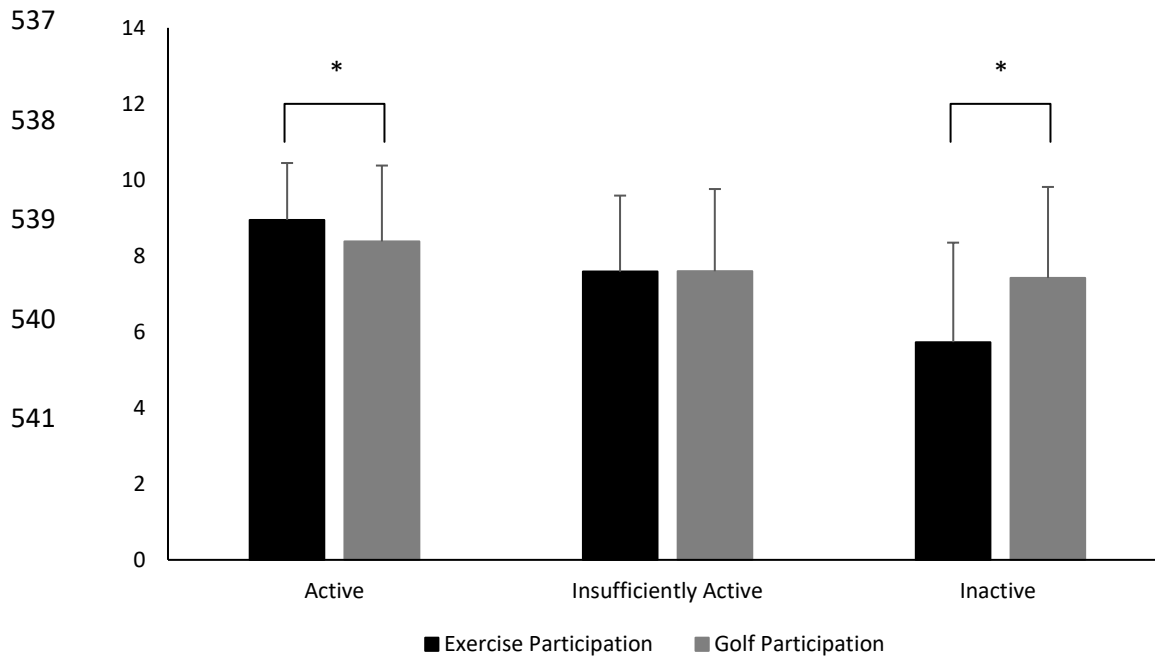
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534 **Figure 3**



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536 **Figure 4**



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