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10 Authors: Gatouillat C. (M.A.),^{a*} Luiggi M. (PhD.),^a Griffet J. (Pr.),^a Travert M. (PhD.)^a

11 ^a*Aix Marseille Univ, CNRS, ISM, Marseille, France.*

12 **Corresponding author: Colin Gatouillat. Email address: colin.gatouillat@univ-amu.fr;*

13 *Email address of other authors: maxime.luiggi@univ-amu.fr; jean.griffet@univ-amu.fr;*

14 *maxime.travert@univ-amu.fr.*

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1 **Abstract**

2 **Background:** Sport participation is declining in some European countries. Previous findings
3 recommended considering territorial specificities to adapt local sports promotion programs.
4 However, in France, little is known about adolescents' preferences and their changes across
5 time. This study aimed to measure preferred sports and their changes among a representative
6 sample of adolescents of the third biggest French *département*.

7 **Methods:** Data were extracted from a previous cross-sectional study that used a quota
8 sampling design to respect the proportions of advantaged and disadvantaged schools. The
9 present study involved 744 and 938 participants, in 2001 and 2015, respectively. Adolescent
10 preferences were calculated by sex and socioeconomic status (SES). Multiple binary logistic
11 regressions were performed to measure changes between 2001 and 2015 by sex and SES.

12 **Results:** Sports preferences and their evolution differed by sex and SES. Three cases were
13 observed: no significant change in sports preferences (low-SES boys); a sharp loss of interest
14 for some sports (low-SES girls and high-SES boys); and a sharp loss of interest for some
15 sports whilst others gained significant interest (high-SES girls).

16 **Conclusions:** This knowledge may help the development of sport promotion programs.
17 Future sport policies could choose to develop sports that are preferred and increasingly
18 appreciated by adolescents.

19

20 **Key words:** sport participation; sport preferences; sport promotion; public health.

21

1 Background

2 Physical activity (PA) is linked to numerous long-term¹⁻³ physical,⁴ psychological and
3 social^{5,6} health benefits. PA promotion is therefore one of the major objectives of public
4 health.⁷ In spite of public health efforts to support PA, findings showed a general decrease in
5 children's and adolescents' participation in western countries^{8,9} (for e.g. USA,¹⁰
6 Switzerland,¹¹ and Australia¹²).

7 In France, successive national promotional campaigns – *Manger Bouger* [Eat Move]
8 and the *Programme National Nutrition Santé* [National Healthy Nutrition Plan¹³] have been
9 developed since 2001 to improve a physically active lifestyle among adults, adolescents and
10 children. In this framework, increasing peoples' active movement (e.g. through cycling or
11 walking) and sport participation was considered an important means to reach the above-
12 mentioned objectives. Likewise, sport, which is a sub-form of PA and can be defined with the
13 Council of Europe's definition,¹⁴ is nationally promoted by sport federations and in school-
14 based physical education lessons. Both are supported by specific public health grants.¹⁵⁻¹⁷
15 Among the former, youth participation is not mandatory, whilst for the latter, participation is
16 compulsory during schooling until age 16 (end of compulsory schooling).

17 The limited success of these programs, shown by national¹⁸ and regional¹⁹ studies,
18 presents these health efforts with a new challenge. Nationally, in 2015, only 22.6% of French
19 youth (aged 6-17) were sufficiently active.¹⁸ Concerning sport, stability in participation was
20 observed at national level but disparities have been shown at regional level.¹⁹ In the third most
21 populous *département* of France (Bouches-du-Rhône),²⁰ a decline in adolescents' (organized
22 and unorganized) participation was observed between 2001 and 2015.¹⁹ The decrease
23 concerned boys and girls, regardless of their socioeconomic status (SES). While 79% of

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1 adolescents played sport at least once a week in 2001, 72% did so in 2008, and only 66% in
2 2015. The results showed important differences in trends by sex and SES.

3 This last study was in line with general policy guidelines that pointed out the need to
4 consider territorial specificities to adapt sports promotion programs.²¹ One of these
5 specificities is the sports chosen by adolescents depending on their life environments.

6 Partial knowledge about the sports practiced by adolescents is provided by
7 federations' license statistics. In 2001 and 2015, in the *département* of Bouches-du-Rhône, the
8 greatest numbers of licenses were found in the soccer, tennis, handball, basketball, horse-
9 riding, and judo federations.^{22,23} However, federation license rates entail some limitations.²³
10 First, some practitioners hold several licenses in different sports federations.²⁴ In the same
11 federation, they may also have an additional “*service license (referees, club officer)*”.²⁵
12 Furthermore, some licenses holders drop out from sport, but their licenses remain recorded in
13 the statistics. Thus, the number of registered licenses is greater than the real number of
14 practitioners in organized sport.²⁴⁻²⁶ Moreover, these statistics do not inform about
15 unorganized sports participation although this participation represented 30% of the overall
16 participation in 2001.²⁷ Some national studies^{28,29} have considered both contexts but
17 methodological differences make temporal analysis difficult to perform.³⁰ They also do not
18 present sports practiced by adolescents within specific French territories.

19 In the perspective of promotion of sports participation, it would be even better to know
20 not only sports adolescents' practice but also those they say they prefer to do. Preferences are
21 subjective constructs³¹ that hierarchize choices, influenced by structural, interpersonal and
22 intrapersonal factors.³² A preference is a “*judgment of esteem or feeling of predilection by*
23 *which one person or one thing give prominence over another*”.³³ It is linked to remembered
24 utilities³⁴ of past lived experiences³⁴ and is predictive of future individual choices.^{35,36} The low

1 level and decline of participation among some groups of adolescents could be in part due to a
2 mismatch between local sports offer – such as facilities, clubs, and events – and their
3 preferences.^{32,37-39} Taking into account these preferences could help to adapt the local sports
4 offer and sustain adolescents' commitment in sport.

5 In this study, we aimed to estimate adolescents' preferred sports participation and their
6 changes in 2015 compared with 2001, in both organized and unorganized contexts, in the
7 *département* of Bouches-du-Rhône. These two temporal points correspond to the overall
8 decline in adolescent participation observed in this area. To achieve this objective, we
9 performed further analysis of data collected among a representative sample of adolescent
10 students from this territory.¹⁹

11

12 **Methods**

13 *Data*

14 The data were extracted from a data collection conducted among a representative
15 sample of adolescent students of the third most populous French department.¹⁹ Schools were
16 selected to reflect the proportion of advantaged and disadvantaged establishments observed in
17 this *département*. School categorizations were derived from the French Ministry of Education,
18 which classifies them according to (i) the level of pupil achievement, (ii) the parents'
19 occupations, and (iii) the area of residence. Disadvantaged schools are characterized by a
20 lower overall level of pupil achievement, a greater proportion of parents with a low-classified
21 occupation, and a lower overall annual income, and are often located in suburban areas.⁴⁰ This
22 sampling strategy helped to catch the social diversity of adolescents and to obtain a
23 representative sample of adolescent students of this *département*. This data collection was
24 approved by the Rector of the regional school authority.

1 *Participants, Procedure and Measures*

2 From this database, we selected participants in 2001 and 2015 and their
3 sociodemographic (age, sex, and SES) and sport participation (rates, favorite practiced sport)
4 variables ($n_{2001}=878$; $n_{2015}=1019$). Students with missing values in sex or SES were excluded
5 from the database ($n_{2001}=134$; $n_{2015}=81$). The present study included 744 participants in 2001
6 aged 13 to 20 (50.8% girls; age=16.6, SD=1.7) and 938 participants in 2015 (53.8% girls;
7 age=16.3, SD=1.7). It included sports ($n_{2001}=592$; $n_{2015}=631$) and non-sports players. In this
8 data collection sport was defined with the definition of the Council of Europe (2001).¹⁴ Sports
9 players (defined as a student who declared playing voluntarily at least one hour of sport per
10 week) were asked to report the sport they preferred to practice outside school (“What sport do
11 you prefer to do?”).

12 *Sport Classification*

13 84 different sports were declared by the adolescents. We created ten subgroups of
14 sports based on categories usually employed by the Ministry of National Education.⁴¹ These
15 sports groups were athletic (athletics, running, etc.), aquatic (swimming, synchronized
16 swimming), gymnastic (rhythmic gymnastics, artistic gymnastics, etc.), artistic (dance, hip-
17 hop, etc.), combat (boxing, judo, etc.), racket (tennis, badminton, etc.), collective (soccer,
18 basketball, etc.), and open-air (climbing, orienteering, etc.). The sports group “self-care”
19 (bodybuilding, aerobics, etc.) was created in 2010.⁴² We added “motor” as they appear in the
20 responses and are not taught in schools in France. For more details about groups and sport
21 activities, see Supplementary File 1, Table 1.

22 *Outcomes*

1 Each sports group was used as a different outcome with two possible values. Students
2 who were sports players were classed as (1) in the sport group variable representing their
3 preferred sport, and as (0) in other sport type variables. Students who were not sports players
4 were classed as (0) in all sports group variables.

5 ***Data Analyses***

6 All the analyses were performed on the entire sample, and thus not only on sports
7 players. We first calculated the distribution (%) of adolescents' preferred sports groups by
8 sex, SES (low and high), and year. The difference in 2015 compared with 2001 was
9 calculated. Secondly, we performed multiple binary logistic regression adjusted for age to
10 determine the evolution of preferred sports groups between 2001 and 2015 by sex and SES.
11 Odds-ratio (OR), 95% confidence interval (95%CI), and p-value were used to measure
12 changes in sports preferences between 2001 and 2015. Distribution, odds-ratio and p-value
13 are presented by sex and SES. The total row in each table has already been published.¹⁸ This
14 row represents the proportions of adolescents who were sports players by sex and SES in
15 2001 and 2015. The odds-ratios comparing sports participation in 2015 with 2001 are also
16 presented. Finally, in Supplementary File 2 the details of sports preferences by subgroups of
17 adolescents and sports are presented.

18 **Results**

19 Table 1 presents the preferred sports groups of low-SES girls in 2001 and 2015, with
20 ORs, 95%CI, and p-value describing their evolution between 2001 and 2015.

21 In 2001, the preferred sports groups of low-SES girls were artistic (23.4%), collective
22 (14.1%), open-air (10.9%), aquatic (8.3%), and athletic (3.6%). In 2015, the preferred sports
23 groups were artistic (19.3%), collective (7.1%), open-air (5.5%), racket (4.6%), and combat
24 (4.6%).

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1 Between 2001 and 2015, there were significant decreases in low-SES girls'
2 preferences for participating in collective sports (OR=0.44, 95%CI=[0.23;0.84]) and in
3 aquatic sports (OR=0.15, 95%CI=[0.04;0.53]). No other significant changes were found.

4 In Supplementary File 2, Table 1 presents details of preferred sports of low-SES girls
5 in 2001 and 2015.

6 Table 2 presents the preferred sports groups of high-SES girls in 2001 and 2015, with
7 OR, 95%CI, and p-value describing their evolution between 2001 and 2015.

8 In 2001, the preferred sports groups of high-SES girls were open-air (20.2%), artistic
9 (14.0%), racket (11.8%), aquatic (8.4%), and collective (8.4%). In 2015, the preferred groups
10 were artistic (27.3%), open-air (8.9%), combat (5.5%), collective (4.4%), and self-care
11 (4.4%).

12 Between 2001 and 2015, there were five significant changes in sport preferences.
13 High-SES girls were respectively 10.45 (95%CI=[1.37;79.89]) and 2.31 times
14 (95%CI=[1.40;3.81]) more likely to prefer to practice a combat sport or an artistic sport in
15 2015 compared with 2001. Conversely, they were less likely to prefer to practice an aquatic
16 sport (OR=0.42, 95%CI=[0.19;0.96]), an open-air sport (OR=0.39, 95%CI=[0.22;0.67]), or a
17 racket sport (OR=0.17; 95%CI=[0.07;0.42]).

18 In Supplementary File 2, Table 2 presents details of preferred sport activities of high-
19 SES girls in 2001 and 2015.

20 Table 3 presents the preferred sports groups of low-SES boys in 2001 and 2015, with
21 OR, 95%CI, and p-value describing their evolution between 2001 and 2015.

22 In 2001, the preferred sports groups of low-SES boys were collective (44.9%), combat
23 (16.8%), open-air (6.6%), racket (6.6%), and athletic (5.6%). In 2015, the preferred groups
24 were collective (42.5%), combat (14.0%), racket (6.5%), self-care (5.5%), and aquatic (3.5%).

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1 No relevant changes in sport preferences between 2001 and 2015 were found. On the
2 contrary, one should note the stability of the sport preferences hierarchy of low-SES boys.

3 In Supplementary File 2, Table 3 presents details of preferred sports of low-SES boys
4 in 2001 and 2015.

5 Table 4 presents the preferred sports groups of high-SES boys in 2001 and 2015, with
6 OR, 95%CI, and p-value describing their evolution between 2001 and 2015.

7 In 2001, the preferred sports groups of high-SES boys were collective (34.3%), open-
8 air (22.5%), racket (11.8%), combat (9.0%), and athletic (5.6%). In 2015, the preferred groups
9 were collective (31.9%), racket (12.2%), combat (10.5%), open-air (10.5%), and self-care
10 (4.8%).

11 Between 2001 and 2015, there was a significant decrease in high-SES boys'
12 preferences for participating in open-air activity. They were 2.44 times less likely to declare
13 preferring to practice an open-air activity outside of school compared with 2001 (OR=0.41,
14 95%CI=[0.23;0.70]). No other significant change was found.

15 In Supplementary File 2, Table 4 presents details of preferred sports of high-SES boys
16 in 2001 and 2015.

17 We also performed additional analyses among students with missing values in SES, by
18 sex. We observed homogeneous results with those performed prior. They are available in
19 Supplementary File 3, Tables 1-2.

20 **Discussion**

21 *Main finding of this study*

22 This is the first time that a snapshot of adolescents' preferred sports has been
23 conducted among two populations of adolescents, separated by a fourteen-years interval. The

1 decrease in adolescent sport participation observed in the third most populous French
2 *département*¹⁸ shows contrasts according to the groups of sports studied. Some sport activities
3 were less appreciated whilst others gained in interest. Our findings also showed variations by
4 sex and SES. Three cases were observed. The first concerned low-SES boys and was
5 characterized by no significant change in their sports preferences. Their favorite sports were
6 the same in 2001 and 2015: collective and combat sports. The second case was distinguished
7 by a sharp loss of interest in some sports. It concerned low-SES girls and high-SES boys.
8 Low-SES girls presented a loss of interest in aquatic sports and collective sports. Regarding
9 high-SES boys, a considerable loss of interest was observed toward open-air sports. Finally,
10 the third case was surprising. High-SES girls presented a sharp loss of interest in three groups
11 of sports while two other groups gained in interest. As with high-SES boys, open-air sports
12 were less appreciated in 2015 than 2001. They also presented a loss of interest in aquatic
13 sports, like girls with low-SES. By contrast, artistic and combat sports earned a new
14 attractiveness.

15 The common loss of interest in aquatic sports among girls raises questions. This result
16 contradicts the common assumption that aquatic sports are one of the most popular sports
17 groups in western countries.⁴³ This is even alarming given the importance of swimming
18 abilities for public health.^{44,45} This loss of interest might be a consequence of the decrease in
19 the number of swimming-pools observed in the most important city –Marseille– of this French
20 *département* (around 50% between 2006 and 2016).⁴⁶ Many studies have shown the
21 importance of the availability and the type of sports infrastructures to understand
22 participation.^{37,38} While this effect could well be due to this environmental factor, additional
23 studies are still needed to clearly understand this phenomenon. Finally, an important loss of
24 interest in open-air sports was observed among high-SES adolescents. We did not have
25 knowledge of environmental factors that could be responsible for this evolution. In any cases,

1 a thorough analysis of trends in local sports policy should be made to understand these
2 common losses of interest in aquatic and open-air sports.

3 ***What is already known on this topic***

4 Several studies have shown a global decrease in physical activity and sport
5 participation among children and adolescents in western countries.^{8-12,47-49} In France,
6 national¹⁷ studies show a stability in adolescents' sport participation rates. Locally, a regional
7 study shows a 15-points decline between 2001 and 2015. This study recommendation
8 confirms general policy guidelines that point out the need to consider territorial specificities to
9 adapt sports promotion programs.²⁰ One of the specificities is the sports practiced by
10 adolescents. Data are provided by sports federations statistics^{21,22} and national studies.²⁷⁻²⁹
11 However the former are not population-based and do not reflect the real rates of participation
12 by sports.²³⁻²⁵ The latter do not examine sports participation within French territories. Finally,
13 none of these studies has examined adolescents' sports preferences despite their importance
14 for potential adaptation of the sports offer (facilities, clubs, events) to adolescents' tastes.³⁵⁻³⁸

15 ***What this study adds***

16 To our knowledge, this is the first French population- and territory-based study that
17 has examined the evolution of adolescents' preferred sports, in both organized and
18 unorganized contexts. Preferences were different by sex and SES. In the global decrease in
19 sport participation, some sports activities declined in attractiveness whereas others were more
20 appreciated. These data could help in the development of future sport promotion programs.
21 Public health officials could choose to support sports that are increasingly appreciated and
22 those that remain the most appreciated. On the other hand, the loss of interest for sports with
23 specific implications for public health (e.g. aquatic sports) is challenging. There is a need to
24 understand this decline in attractiveness to devise appropriate interventions to increase

1 involvement in these activities. Our results could have an additional interest for French
 2 physical education and sport (PES) teachers. Our study used the same sports categories as
 3 those used by the Ministry of Education.^{41,42} One main objective of the PES discipline is to
 4 “develop and consolidate the taste for and pleasure of practicing regularly and
 5 independently”.⁴² Thus, these results provide PES teachers with initial information to
 6 potentially adapt their educational program according to adolescent’s preferences.

7 ***Limitations of this study***

8 The first limitation is due to the restricted geographical area of the study. Our sample
 9 is representative of adolescent students of the third most populous French *département*.
 10 Results represent sports preferences and their changes across time. However, we cannot
 11 conclude regarding the sports preferences of the whole country. France is characterized by a
 12 wide diversity of environments (e. g. mountain, coast, forest) that leads to different sports
 13 practice according to *départements*. For example, alpine sports (such as skiing) are popular in
 14 the Rhône-Alpes region.⁵⁰ Additional studies are needed to improve knowledge of
 15 adolescents’ sports preferences across the country.

16 Secondly, we decided to group sports into ten different groups. This strategy may well
 17 hide disparities in preferences toward more specific sports. For instance, we observed a
 18 decline in attractiveness of the open-air sports category. Within this general decline, horse-
 19 riding gained in attractiveness (see Supplementary File 2, Tables 1-2). These results are
 20 consistent with the increasing number of licenses of the French horse-riding federation
 21 observed in the last fifteen years.^{21,22} Future studies may obtain a sufficient sample size to
 22 perform narrower analysis by sports.

23 Thirdly, adolescents’ sports preferences were obtained with the question “What sport
 24 do you prefer to do?” This question did not allow the adolescents to report multiple

1 preferences. In future studies, it would be better to offer the possibility of reporting multiple
2 sports practices and ranking them according to their preferences.

3 **Conclusions**

4 We observed a sharp loss of interest in some groups of sports whilst others rose.
5 Changes were different by sex and SES, but some common tendencies were observed. Among
6 girls, aquatic sports have lost attractiveness. Among high-SES boys and girls, open-air sports
7 were less appreciated in 2015 compared to 2001. Collective, racket and combat sports
8 remained preferred by boys. This knowledge may help the development of future sport
9 promotion programs. Sport policies could choose to develop sports that are increasingly
10 appreciated and those that are at the top of adolescents' preferences.

11 **Other information**

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18 *Declarations of interest*

19 Authors declare no conflicts of interest.

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WHAT SPORT DO YOU PREFER TO DO?

1

Table 1: Preferred groups of sport activities of **low-SES girls** in 2001 and 2015, with odds-ratio (OR) and 95% confidence interval (CI) describing the relationship between preferred group of sport activities and year, adjusted for age.

Groups of sport activities	2001 % (n)	2015 % (n)	Diff	OR	95% CI
ARTISTIC	23.4% (45)	19.3% (46)	-4.1%	0.77	[0.48; 1.24]
COLLECTIVE	14.1% (27)	7.1% (17)	-6.9%	0.44*	[0.23; 0.84]
OPEN-AIR	10.9% (21)	5.5% (13)	-5.5%	0.50	[0.24; 1.03]
RACKET	2.6% (5)	4.6% (11)	+2.0%	1.78	[0.60; 5.32]
COMBAT	2.1% (4)	4.6% (11)	+2.5%	1.97	[0.60; 6.44]
ATHLETIC	3.6% (7)	3.4% (8)	-0.3%	0.77	[0.48; 1.24]
GYMNASTIC	2.6% (5)	2.5% (6)	-0.1%	0.79	[0.23; 2.74]
SELF-CARE	0.0% (0)	2.5% (6)	+2.5%	NA	NA
AQUATIC	8.3% (16)	1.3% (3)	-7.1%	0.15**	[0.04; 0.53]
MOTOR	0.0% (0)	0.0% (0)	0.0%	NA	NA
All sports players	67.7% (130)	50.8% (121)	-16.9%	0.49***	[0.33; 0.74]

Notes. Preferred groups of sport activities are sorted in descending order for the year 2015. *p<0.05; **p<0.01; ***p<0.001

Among all low-SES girls, 23.4% preferred to practice an artistic sport. 67.7% practiced a sport activity in 2001.

2

3

WHAT SPORT DO YOU PREFER TO DO?

1

Table 2: Preferred groups of sport activities of **high-SES girls** in 2001 and 2015, with odds-ratio (OR) and 95% confidence interval (CI) describing the relationship between preferred group of sport activities and year, adjusted for age.

Groups of sport activities	2001 % (n)	2015 % (n)	Diff	OR	95% CI
ARTISTIC	14.0% (25)	27.3% (74)	+13.3%	2.31***	[1.40; 3.81]
OPEN-AIR	20.2% (36)	8.9% (24)	-11.4%	0.39***	[0.22; 0.67]
COMBAT	0.6% (1)	5.5% (15)	+5.0%	10.45*	[1.37; 79.89]
COLLECTIVE	8.4% (15)	4.4% (12)	-4.0%	0.50	[0.23; 1.09]
SELF-CARE	2.8% (5)	4.4% (12)	+1.6%	1.61	[0.56; 4.67]
AQUATIC	8.4% (15)	3.7% (10)	-4.7%	0.42*	[0.19; 0.96]
ATHLETIC	3.4% (6)	3.7% (10)	+0.3%	1.12	[0.40; 3.16]
GYMNASTIC	2.8% (5)	3.3% (9)	+0.5%	1.18	[0.39; 3.58]
RACKET	11.8% (21)	2.2% (6)	-9.6%	0.17***	[0.07; 0.42]
MOTOR	0.0% (0)	0.0% (0)	0.0%	NA	NA
All sports players	72.5% (129)	63.5% (172)	-9.0%	0.66*	[0.44; 1.00]

Notes. Preferred groups of sport activities are sorted in descending order for the year 2015. *p<0.05; **p<0.01; ***p<0.001

Among all high-SES girls, 14.0% preferred to practice an artistic sport. 72.5% practiced a sport activity in 2001.

2

Table 3: Preferred groups of sport activities of **low-SES boys** in 2001 and 2015, with odds-ratio (OR) and 95% confidence interval (CI) describing the relationship between preferred group of sport activities and year adjusted for age.

Groups of sport activities	2001 % (n)	2015 % (n)	Diff	OR	95% CI
COLLECTIVE	44.9% (88)	42.5% (85)	-2.4%	0.89	[0.59; 1.33]
COMBAT	16.8% (33)	14.0% (28)	-2.8%	0.78	[0.45; 1.35]
RACKET	6.6% (13)	6.5% (13)	-0.1%	0.94	[0.42; 2.10]
SELF-CARE	5.1% (10)	5.5% (11)	+0.4%	1.22	[0.50; 2.98]
AQUATIC	0.5% (1)	3.5% (7)	+3.0%	7.22	[0.87; 59.78]
OPEN-AIR	6.6% (13)	3.0% (6)	-3.6%	0.38	[0.14; 1.04]
ATHLETIC	5.6% (11)	2.0% (4)	-3.6%	0.41	[0.13; 1.31]
ARTISTIC	0.5% (1)	0.5% (1)	0.0%	0.70	[0.04; 12.40]
MOTOR	0.5% (1)	0.5% (1)	0.0%	1.37	[0.08; 24.12]
GYMNASTIC	0.0% (0)	0.5% (1)	+0.5%	NA	NA
All sports players	87.2% (171)	78.5% (157)	-8.7%	0.51*	[0.30; 0.88]

Notes. Preferred groups of sport activities are sorted in descending order for the year 2015. *p<0.05; **p<0.01; ***p<0.001

Among all low-SES boys, 44.9% preferred to practice a collective sport. 87.2% practiced a sport activity in 2001.

1

Table 4: Preferred groups of sport activities of **high-SES boys** in 2001 and 2015, with odds-ratio (OR) and 95% confidence interval (CI) describing the relationship between preferred group of sport activities and year adjusted for age.

Groups of sport activities	2001 % (n)	2015 % (n)	Diff	OR	95% CI
COLLECTIVE	34.3% (61)	31.9% (73)	-2.4%	0.92	[0.60; 1.39]
RACKET	11.8% (21)	12.2% (28)	+0.4%	0.98	[0.53; 1.81]
COMBAT	9.0% (16)	10.5% (24)	+1.5%	1.20	[0.62; 2.34]
OPEN-AIR	22.5% (40)	10.5% (24)	-12.0%	0.41***	[0.23; 0.70]
SELF-CARE	3.4% (6)	4.8% (11)	+1.4%	1.56	[0.56; 4.34]
ATHLETIC	5.6% (10)	3.9% (9)	-1.7%	0.69	[0.28; 1.75]
AQUATIC	3.4% (6)	3.5% (8)	+0.1%	1.05	[0.36; 3.10]
MOTOR	0.0% (0)	0.9% (2)	+0.9%	NA	NA
ARTISTIC	1.1% (2)	0.9% (2)	-0.3%	0.79	[0.11; 5.67]
GYMNASTIC	0.0% (0)	0.0% (0)	0.0%	NA	NA
All sports players	91.0% (162)	79.0% (181)	-12.0%	0.38***	[0.21; 0.69]

Notes. Preferred groups of sport activities are sorted in descending order for the year 2015. *p<0.05; **p<0.01; ***p<0.001

Among all high-SES boys, 34.3% preferred to practice a collective sport. 91.0% practiced a sport activity in 2001.

2