

## Anti-doping Awareness among British and Japanese Judo Coaches

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### Abstract

**Objective:** To reveal the understanding among judo coaches from different countries on anti-doping, and their understanding of how this is intrinsically valuable to sport.

**Design:** Survey study.

**Participants:** 74 British coaches (UK coaches) and 66 Japanese coaches (JPN coaches) certified by the British Judo Association or the All Japan Judo Federation, as appropriate.

**Results:** Most of both countries' coaches knew National Anti-Doping Organization and World Anti-Doping Agency. Almost of JPN coaches had attended an anti-doping workshop, however many of UK coaches had never attended such a workshop. There are aimed to compare the two countries' views of doping along the social, educational, ethical, and health-related aspects. The results from Question 7.1 (I agree with the act of doping), Question 7.6 (Doping enables judoka to improve their performance), and Question 7.9 (Prohibited substances are possibly included in certain legal medicines and food supplements) were significantly different between the UK coaches and JPN coaches groups.

**Conclusions:** Judo coaches around the world should be educated on anti-doping regimes.

**Keywords:** Anti-doping; Education; Coach; Judo

### Introduction

All athletes participating in competition are expected to strictly adhere to international rules and regulations governing their sport. Doping is fundamentally contrary to this intrinsic spirit of competition, and therefore damages competition integrity. Doping issues are a problem to be fought around the world in all sports, and doping among all athletes and coaches are strictly prohibited. The official stance of the International Olympic Committee Ethics 2012 (Dignity 3) that "All doping practices at all levels are strictly prohibited. The provision against doping in the World Anti-Doping Code shall be scrupulously observed [1]". The Anti-Doping Code, in turn, states that "The anti-doping programs seek to preserve what is intrinsically valuable about sports. This intrinsic value is often referred to as [2] 'the spirit of sport' [3]". Thomas Bach, president of the International Olympic Committee, noted in his opening speech at the 2013 World Conference on Doping in Sport "clean athletes" are an investment in the future of our sport. The future of sport greatly depends on our success in the fight against doping, any kind of manipulation and related corruption, because all their measures serve to protect the clean athletes [4]". It is difficult to establish a competition where athletes have only an understanding of competition rules. Rather, it is necessary for the future of sport for athletes, coaches, and support staff

must have understand of the integrity of sport through anti-doping education.

Professor Jigoro Kano, who developed judo from jujutsu in 1882, founded the Kodokan Institute for the instruction of judo. He expressed a similar opinion that emphasized the importance of education through judo. The principles and aims of judo can be characterized by one of its main aspects, "Jundo Seisho", or "victory by following the true path" [5]. Thus, there are obvious similarities between the fight against doping in sport and principles and aims of judo.

Various people in different fields support an athlete in competing. Coaches are important for athletes to establish themselves, and athletes are strongly influenced by their coaches in competing in their sport [6]. Therefore, coaches must also understand anti-doping programs and seek to preserve what is intrinsically valuable about sport. There are many anti-doping surveys designed for school students and athletes [7-10] however, research and comparisons that consider international comparisons of anti-doping in coaches is limited.

Therefore, in this study we conducted a survey on the anti-doping views of coaches located in different countries, coaching the same sport, as well on their understanding of how anti-doping is intrinsically valuable to sport.

## Methods

The protocol was revised and approved by the Ethics Committee on Human Research of Waseda University 2013-048. English questionnaires are approved at Loughborough University, Ethics Approvals (Human Participants) Sub-Committee October 2012.

This study focuses on several aspects in coaches instructing in judo clubs. A total of 74 coaches in the United Kingdom (UK) and 66 coaches in Japan (JPN) were investigated. This survey was conducted for coaches that are active coaching in UK and JPN judo clubs. The UK covered 74 judo coaches qualified as coaches certified by British Judo Association. Japan covered 66 judo coaches qualified as coaches certified by the All Japan Judo federation. UK coaches completed the questionnaire survey (in English) in November 2012, and JPN coaches completed the questionnaire survey (in Japanese) in May 2014. The questionnaire survey was prepared in English and in Japanese and the validity of the translation was checked by a specialist. In the UK, the British judo Association conducted e-mail and coach seminar, and collected them during e-mails and seminar. In Japan, it was held at a coach seminar, taking a form to collect on the spot. The questionnaire content was done in a form using choices by anonymous.

The questionnaire comprised several anti-doping items, consisting of social aspects, educational aspects, ethical aspects, and medical aspects (Tables 1–5). Questionnaire surveys were analyzed, and comparisons were made between all UK coaches (UK\_ALL) and all JPN coaches (JPN\_ALL), as well as between subgroups of UK coaches that had reviewed at least one anti-doping education workshop (UK\_Y group) and had never attended such a workshop (UK\_N group). Because only 3 Japanese coaches had never attended an anti-doping education workshops, only the group that had attended a workshop (JPN\_Y group) underwent targeted analysis.

UK and JPN coaches' responses from Questions 4–7 were compared using the chi-square test (Question 4-6) and the Mann-Whitney U test (Question 7) in IBM SPSS Statistics version 21 for Windows. Statistical significance was set at  $p < 0.05$ . UK and JPN coaches' age responses were compared using independent t-test calculated using IBM SPSS Statistics version 21 for Windows. Statistical significance was set at  $p < 0.05$ .

## Result

Questions 1 “coaches' age”. There was a total of 74 UK coaches (age  $47.0 \pm 10.2$  years) and 66 JPN coaches (age  $50.3 \pm 8.4$  years), with JPN coaches significantly older.

Question 2 “gender”. The gender ratio for UK coaches was 62 males and 12 females, and that for JPN coaches was 64 males and 2 females.

Question 3 “years of judo experience respectively”. JPN coaches ( $39.0 \pm 8.3$  years) had significantly more years of judo experience than UK coaches ( $31.1 \pm 11.7$  years).

Question 4 was about knowledge of the National Anti-Doping Organization (NADO). 69 of the 74 UK coaches (93.2%) responded that they knew of NADO and 5 responded (6.8%) that they did not, whereas 58 of the 66 JPN coaches (87.9%) responded that they knew of NADO and 8 responded (12.1%) that they did not (Table 1).

Question 5 was about knowledge of the World Anti-Doping Agency (WADA). 56 UK coaches (75.7%) responded that they knew of WADA and 18 responded (24.3%) that they did not, and 50 JPN coaches (75.7%) responded that they knew of WADA and 16 responded (24.2%) that they did not (Table 1).

		Yes	No	P
Q4. Do you know the National Anti-Doping Organization (NADO)?	UK_ALL	69 (93.2%)	5 (6.8%)	0.275
	JPN_ALL	58 (87.9%)	8 (12.1%)	
Q5. Do you know the World Anti-Doping Agency (WADA)?	UK_ALL	56 (75.7%)	18 (24.3%)	0.991
	JPN_ALL	50 (75.8%)	16 (24.2%)	
n=74 (UK_ALL) n=66 (JPN_ALL)				

Table 1: Knowledge of the National Anti-Doping Organization (NADO) and the World Anti-Doping Agency (WADA).

Question 6 regarded coaches' opportunity to attend anti-doping. 46 of the 74 UK coaches (62.2%) responded that they had never attended a workshop, and 20 responded (27.0%) that they had attended at least once, whereas 3 of the 66 JPN coaches (4.6%) who responded that they have never attended the workshops, and 14 responded (21.2%) that they have attended once (Table 2).

Q6. How often have you attended anti-doping workshops?							
	Never Attended	Attended Once	Attended Once a Month	Attended Twice a Year	Attended Once a Year	Attended Once 2-3 Years	P
UK_ALL	46	20	0	1	4	3	0.000*
	62.20%	27.00%	0.00%	1.40%	5.40%	4.10%	
JPN_ALL	3	14	0	1	26	22	
	4.60%	21.20%	0.00%	1.50%	39.40%	33.30%	

n=74 (UK_ALL) n=66 (JPN_ALL)							
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**Table 2:** Coaches' opportunity to attend anti-doping.

Question 7 was divided into 10 sub-questions that aimed to compare the two countries' views of doping in terms of social, educational, ethical, and health-related aspects. The first set of comparisons was between the UK\_ALL (n=74) and JPN\_ALL groups (n=66) (Table 3).

Responses to Question 7.1, "I agree with the act of doping", indicated that 41 coaches in UK\_ALL (55.4%) responded that they "Strongly disagree" and 31 (41.9%) responded that they "Strongly agree", whereas in JPN\_ALL, 49 coaches (74.2%) responded that they "Strongly disagree", and 9 (13.6%) responded that they "Strongly agree", representing a significant difference between groups.

In Question 7.2, "Doping is anti-fair play", Question 7.3 "Doping is an anti-social activity or behavior", Question 7.4 "Doping threatens athletes' health", and Question 7.5 "Doping depreciates the value of judo", "Strongly agree" was the most common response, and there were no significant differences between the UK\_ALL group and JPN\_ALL group.

In Question 7.6 "Doping enables judoka to improve their performance", 21 coaches in UK\_ALL (28.4%) responded that they "Agree" and 21 coaches (28.4%) responded that they "Strongly agree"; whereas 39 coaches in JPN\_ALL (59.1%) responded that they "Strongly disagree", indicating a significant difference between groups.

In Question 7.7, "The meaning of sports is to do anything to win", 34 coaches in the UK\_ALL group (45.9%) and 34 in the JPN\_ALL group (51.5%) responded "Disagree". There was no significant difference in responses between groups.

In Question 7.8, "It would not be a problem to dope in order to win a competition", 58 coaches in the UK\_ALL group (78.4%) and 58 in the JPN\_ALL group (87.9%) responded "Strongly disagree", with no significant differences in responses between groups.

In Question 7.9, "Prohibited substances are possibly included in certain legal medicines and food supplements" showed that 30 coaches in the UK\_ALL group (40.5%) responded that they "Don't know", 32 in the JPN\_ALL group (48.5%) responded that they "Agree", and 21 in the JPN\_ALL group (31.8%) responded that they "Strongly agree". The difference in responses between the groups was statistically significant.

In Question 7.10, "I believe that anti-doping and the intrinsic value of sports are the same", 15 coaches in the UK\_ALL group (20.3%) and 33 in the JPN\_ALL group (50.0%) responded that they "Strongly agree". There was no significant difference between two groups.

Q7 UK_ALL and JPN_ALL	(n)						M: Median	P
	1. Strongly Disagree	2. Disagree	3. Don't know	4. Agree	5. Strongly Agree			
Q7.1 I agree with the action of doping.	UK_ALL	41	0	0	2	31	1	0.004 *
		55.40%	0.00%	0.00%	2.70%	42.90%		
	JPN_ALL	49	3	2	3	9	1	
		74.20%	4.50%	3.00%	4.50%	13.60%		
Q7.2 Doping is anti-fair play.	UK_ALL	9	2	1	5	57	5	0.568
		12.20%	2.70%	1.40%	6.80%	77.00%		
	JPN_ALL	6	0	0	7	53	5	
		9.10%	0.00%	0.00%	10.60%	80.30%		
Q7.3 Doping is an anti-social activity or behavior.	UK_ALL	8	5	7	7	47	5	0.215
		10.80%	6.80%	9.50%	9.50%	63.50%		
	JPN_ALL	5	2	1	11	47	5	
		7.60%	3.00%	1.50%	16.70%	71.20%		
Q7.4 Doping threatens athlete's health	UK_ALL	6	0	6	14	48	5	0.248
		8.10%	0.00%	8%	18.90%	64.90%		
	JPN_ALL	6	0	1	10	49	5	

		9.00%	0.00%	1.50%	15.10%	74.20%		
Q7.5 Doping depreciates the value of Judo	UK_ALL	6	1	2	6	59	5	0.627
		8.10%	1.40%	2.70%	8.10%	79.70%		
	JPN_ALL	6	1	0	9	50	5	
		9.00%	1.50%	0.00%	13.60%	75.80%		
Q7.6 Doping enables Judoka to improve their performance.	UK_ALL	13	5	14	21	21	4	0.000 *
		17.60%	6.80%	18.90%	28.40%	28.40%		
	JPN_ALL	39	11	9	2	5	1	
		59.10%	16.70%	13.60%	3.00%	7.60%		
Q7.7 The meaning (purpose) of sports is all for the victory.	UK_ALL	29	34	6	2	3	2	0.561
		39.20%	45.90%	8.10%	2.70%	4.10%		
	JPN_ALL	22	34	4	5	1	2	
		33.30%	51.50%	6.00%	7.60%	1.50%		
Q7.8 It would not be a problem to dope in order to win a competition.	UK_ALL	58	6	1	1	8	1	0.094
		78.40%	8.10%	1.40%	1.40%	10.80%		
	JPN_ALL	58	7	0	0	1	1	
		87.90%	10.60%	0.00%	0.00%	1.50%		
Q7.9 Prohibited substances are possibly involved in a kind of food supplements and medicine.	UK_ALL	5	2	30	22	15	3.5	0.001 *
		6.80%	3%	40.50%	29.70%	20.30%		
	JPN_ALL	1	1	11	32	21	4	
		1.50%	1.50%	16.70%	48.50%	31.80%		
Q7.10 I believe that anti-doping and sports intrinsic values are the same.	UK_ALL	3	7	16	12	36	4	0.15
		4.00%	10%	22%	16.20%	48.60%		
	JPN_ALL	1	0	8	24	33	4.5	
		1.50%	0.00%	12.10%	36.40%	50.00%		
n=74 (UK_ALL) n=66 (JPN_ALL)								

**Table 3:** Comparison of UK\_ALL and JPN\_ALL countries' views of doping.

The second set of comparisons was between the UK\_Y group (n=28) and the JPN\_Y group (n=63) (Table 4).

In Question 7.1, "I agree with the act of doping", indicated that 14 coaches in the UK\_Y group (50%) responded "Strongly disagree" and 14 (50.0%) responded "Strongly agree", whereas 48 coaches in JPN\_Y (76.2%) responded "Strongly disagree", representing a statistically significant difference between groups.

In Question 7.2, "Doping is anti-fair play", Question 7.3 "Doping is an anti-social activity or behavior", Question 7.4 "Doping threatens athletes' health", and Question 7.5 "Doping depreciates the value of judo", indicated that "Strongly agree" was the most common responses, and there were no significant differences between groups.

In Question 7.6 "Doping enables judoka to improve their performance", indicated that 8 coaches in the UK\_Y group (28.6%) responded "Agree" and 8 (28.6%) responded "Strongly agree". However, 37 coaches in the JPN\_Y group (58.7%) responded "Strongly disagree". There was significant difference between the UK\_Y group and JPN\_Y group.

In Question 7.7, "The meaning of sports is to do anything to win", 13 coaches in the UK\_Y group (46.4%) and 34 in the JPN\_Y group (54.0%) responded "Disagree". The mean difference in response between the groups was not significant.

In Question 7.8, "It would not be a problem to dope in order to win a competition", 22 coaches in the UK\_Y group (78.6%) and 55 in JPN\_Y group (87.3%) responded.

“Strongly disagree”. There was no significant difference between the UK\_Y group and JPN\_Y group.

In Question 7.9, “Prohibited substances are possibly included in certain legal medicines and food supplements” showed that 7 coaches in the UK\_Y group (25.9%) responded “Don’t know” and 13 (46.4%) responded “Agree”, whereas 31 in the JPN\_Y group (49.2%) responded that “Agree” and 21 (33.3%) responded “Strongly agree”. The mean difference between the UK\_Y group and JPN\_Y group was statistically significant.

In Question 7.10, “I believe that anti-doping and the intrinsic value of sports are the same”, 15 coaches in the UK\_Y group (53.6%) and 32 in the JPN\_Y group (50.8%) responded that “Strongly agree”. The mean difference between the UK\_Y group and JPN\_Y group was not significant.

Finally, comparisons were made between the UK\_Y group (n=28) and UK\_N group (n=46) (Table 5).

In Question 7.1, “I agree with the act of doping”, indicated that 27 coaches in UK\_N (58.7%) responded “Strongly disagree”, and 17 (37.0%) responded “Strongly agree”.

There was no significant difference between the UK\_Y group and UK\_N group.

In Question 7.2, “Doping is anti-fair play”, Question 7.3 “Doping is an anti-social activity or behavior”, Question 7.4 “Doping threatens athletes’ health”, and Question 7.5 “Doping depreciates the value of judo”, indicated that, “Strongly agree” was the most common response, and there was no significant difference between groups.

Q7 UK_Y and JPN_Y		(n)					M: Median	P
		1. Strongly Disagree	2. Disagree	3. Don't know	4. Agree	5. Strongly Agree		
Q7.1 I agree with the action of doping.	UK_Y	14	0	0	0	14	3	0.003 *
		50.00%	0.00%	0.00%	0.00%	50.00%		
	JPN_Y	48	3	1	3	8	1	
		76.20%	4.80%	1.60%	4.80%	12.70%		
Q7.2 Doping is anti-fair play.	UK_Y	4	1	1	2	20	5	0.356
		14.30%	3.60%	3.60%	7.10%	71.40%		
	JPN_Y	6	0	0	7	50	5	
		9.50%	0.00%	0.00%	11.10%	79.40%		
Q7.3 Doping is an anti-social activity or behavior.	UK_Y	3	2	2	1	20	5	0.881
		10.70%	10.70%	10.70%	3.60%	71.40%		
	JPN_Y	5	2	1	11	44	5	
		7.90%	3.20%	1.60%	17.50%	69.80%		
Q7.4 Doping threatens athlete's health	UK_Y	2	0	1	5	20	5	0.917
		10.70%	0.00%	4%	17.90%	71.40%		
	JPN_Y	6	0	1	10	46	5	
		9.50%	0.00%	1.60%	15.90%	73.00%		
Q7.5 Doping depreciates the value of Judo	UK_Y	1	0	2	0	25	5	0.138
		3.60%	0.00%	10.70%	0.00%	89.30%		
	JPN_Y	6	1	0	9	47	5	
		9.50%	1.60%	0.00%	9.50%	74.60%		
Q7.6 Doping enables Judoka to improve their performance.	UK_Y	6	1	5	8	8	4	0.000 *
		21.40%	3.60%	17.90%	28.60%	28.60%		
	JPN_Y	37	10	9	2	5	1	
		58.70%	15.90%	14.30%	3.20%	7.90%		

Q7.7 The meaning (purpose) of sports is all for the victory.	UK_Y	11	13	3	1	0	2	0.538
		39.30%	46%	10.70%	3.60%	0.00%		
JPN_Y	20	34	3	5	1	2		
	31.70%	54.00%	4.80%	7.90%	1.60%			
Q7.8 It would not be a problem to dope in order to win a competition.	UK_Y	22	2	0	1	3	1	0.22
		78.60%	10.70%	0.00%	3.60%	10.70%		
	JPN_Y	55	7	0	0	1	1	
		87.30%	11.10%	0.00%	0.00%	1.60%		
Q7.9 Prohibited substances are possibly involved in a kind of food supplements and medicine.	UK_Y	3	1	7	13	4	4	0.010 *
		10.70%	3.60%	25.00%	46.40%	14.30%		
	JPN_Y	1	1	9	31	21	4	
		1.60%	1.60%	14.30%	49.20%	33.30%		
Q7.10 I believe that anti-doping and sports intrinsic values are the same.	UK_Y	1	5	4	3	15	5	0.372
		3.60%	17.90%	14.30%	10.70%	53.60%		
	JPN_Y	1	0	7	23	32	5	
		1.60%	0.00%	11.10%	36.50%	50.80%		
n=28 (UK_Y) n=63 (JPN_Y)								

**Table 4:** Comparison of UK\_Y and JPN\_Y countries' views of doping.

In Question 7.6 “Doping enables judoka to improve their performance”, indicated that 13 coaches in the UK\_N group (28.3%) responded “Agree” and 8 in the UK\_N group (28.3%) responded “Strongly agree”. There was no significant difference between the groups.

In Question 7.7, “The meaning of sports is to do anything to win”, 18 coaches in the UK\_N group (39.1%) responded “Strongly disagree” and 21 in the UK\_N group (45.7%) responded “Disagree”.

Q7. UK_Y and UK_N		(n)					M: Median	P
		1. Strongly Disagree	2. Disagree	3. Don't know	4. Agree	5. Strongly Agree		
Q7.1 I agree with the action of doping	UK_Y	14	0	0	0	14	3	0.37
		50.00%	0.00%	0.00%	0.00%	50.00%		
	UK_N	27	0	0	2	17	1	
		58.70%	0.00%	0.00%	4.30%	37.00%		
Q7.2 Doping is anti-fair play	UK_Y	4	1	1	2	20	5	0.384
		14.30%	3.80%	3.80%	7.10%	71.40%		
	UK_N	5	1	0	3	37	5	
		10.90%	2.20%	0.00%	6.50%	80.40%		
Q7.3 Doping is an anti-social activity or behavior	UK_Y	3	2	2	2	20	5	0.411
		10.70%	7.10%	7.10%	7.10%	71.40%		
	UK_N	5	3	5	6	27	5	

		10.90%	6.50%	10.90%	13.00%	58.70%		
Q7.4 Doping threatens athlete's health	UK_Y	2	0	1	5	20	5	0.331
		7.10%	0.00%	4%	17.90%	71.40%		
	UK_N	4	0	5	9	28	5	
		8.70%	0.00%	10.90%	19.60%	60.90%		
Q7.5 Doping depreciates the value of Judo	UK_Y	1	0	2	0	25	5	0.129
		3.80%	0.00%	7.10%	0.00%	89.30%		
	UK_N	5	1	0	6	34	5	
		10.90%	2.20%	0.00%	13.00%	73.90%		
Q7.6 Doping enables Judoka to improve their performance	UK_Y	6	1	5	8	8	4	0.922
		21.40%	3.80%	17.90%	28.60%	28.60%		
	UK_N	7	4	9	13	13	4	
		15.20%	8.70%	19.60%	28.30%	28.30%		
Q7.7 The meaning (purpose) of sports is all for the victory	UK_Y	11	13	3	1	0	2	0.899
		39.30%	46.40%	10.70%	3.80%	0.00%		
	UK_N	18	21	3	1	3	2	
		39.10%	45.70%	6.50%	2.20%	6.50%		
Q7.8 It would not be a problem to dope in order to win a competition	UK_Y	22	2	0	1	3	1	0.994
		78.60%	7.10%	0.00%	3.80%	10.70%		
	UK_N	36	4	1	0	5	1	
		78.30%	8.70%	2.20%	0.00%	10.90%		
Q7.9 Prohibited substances are possibly involved in a kind of food supplements and medicine	UK_Y	3	1	7	13	4	4	0.8
		10.70%	4%	25%	46.40%	14.30%		
	UK_N	2	1	23	9	11	3	
		4.30%	2.20%	50.00%	19.60%	23.90%		
Q7.10 I believe that anti-doping and sports intrinsic values are the same	UK_Y	1	5	4	3	15	5	0.943
		3.80%	18%	14%	10.70%	53.60%		
	UK_N	2	2	12	9	21	4	
		4.30%	4.30%	26.00%	19.60%	45.70%		
n=28 (UK_Y) n=46 (UK_N)								

**Table 5:** Comparison UK\_Y and UK\_N countries' views of doping.

In Question 7.8, "It would not be a problem to dope in order to win a competition", 36 in the UK\_N group (78.3%) responded "Strongly disagree".

In Question 7.9, "Prohibited substances are possibly included in certain legal medicines and food supplements" showed that 23 coaches in the UK\_N group (50.0%) responded "Don't know".

In Question 7.10, "I believe that anti-doping and the intrinsic value of sports are the same", 15 coaches in the UK\_Y group (53.6%) and 21

in the UK\_N group (45.7%) responded "Strongly agree". For each question, there was no significant difference between the UK\_Y and UK\_N group.

## Discussion

The surveys focused on different aspects of the same sport, with coaches from different countries providing their views on anti-doping and their understanding of the intrinsic value of sport. A total of 74

UK judo coaches and 66 JPN judo coaches certified by the British Judo Federation or the All Japan Judo Federation participated in the survey.

Questions 1–3 obtained basic participant data of age, gender, and years of judo experience. Results indicated that the age of UK and JPN coaches was significantly different. Both countries had more male than female coaches, but years of judo experience were significantly different between UK and JPN, however both countries coaches had over 30 years of judo experience. Coaches in both countries have sufficient years of judo experience and a deep understanding of judo; therefore, participants' age, gender, and years of judo experience are not expected to affect other obtained results.

Questions 4 and 5 regard knowledge of anti-doping institutions that establish rules and regulations. Both countries' coaches (UK\_ALL group and JPN\_ALL group) had a high awareness of the WADA and NADO institution.

Question 6 discusses coaches' opportunities to obtain anti-doping knowledge. Almost all (95.5%) of the JPN\_ALL group answered that they had attended anti-doping workshops; however, 46 coaches (62.2%) from the UK\_ALL group answered that they had never attended anti-doping workshops. This result shows that coaches have different opportunities for anti-doping education based on their country. Coaches in both countries are aware of the institutions that set anti-doping rules. JPN coaches might have learned about the WADA and NADO institutions from attending anti-doping workshops, but UK coaches may have learned about the institutions from a different source. For instance, UK coaches could have access to a brief overview of anti-doping through the WADA and United Kingdom Anti-Doping (UKAD) websites, and UK coaches are also encouraged to take the "Coaching Clean" UKAD online education module [11]. Similarly JPN coaches can take JADA anti-doping education online [12]. In this regard, online education provides coaches in both countries equal opportunities for anti-doping education. In addition, JPN coaches also have many opportunities to receive anti-doping training regionally. For example, JPN coaches have chances to attend anti-doping workshops before the annual National Sport Festival, which is not limited to only top-level coaches. For example, the 2014 National Sports Festival held in Wakayama Prefecture [13] launched the Sports Pharmacists system [14] for each sport and promoted the need for education on anti-doping for coaches. This indicates a difference in the way that JPN and UK consider the importance of anti-doping education, but whether they promote it through websites or workshops, both countries give coaches opportunities to learn anti-doping rules.

Question 7 aimed to compare the two countries' views of doping along the social, educational, ethical, and health-related aspects. The results from Question 7.1 (I agree with the act of doping), Question 7.6 (Doping enables judoka to improve their performance), and Question 7.9 (Prohibited substances are possibly included in certain legal medicines and food supplements) were significantly different between the UK and JPN groups.

The fundamental rationale for the code is protecting the intrinsic value of sport. This intrinsic value is often referred to as "the spirit of sport" and is reflected in the values found in the sport-related ethics of fair play, honesty of character, and the education around respect for rules and law [3]. Question 7.1 and Question 7.6 question whether there is a positive aspect to doping, and the results between UK and JPN were significantly different, despite expectations that they would

be similar because the coaches, despite being in different countries, were coaching the same sport.

This study is limited to judo competition, but doping is fundamentally contrary to the spirit of all sports. Because coaches are a strong influence on athletes [15], and because athletes will come into contact with variety of coaches in the process of becoming competitive enough to compete in international tournaments, coaches at all levels should understand the fundamental rationale for the World Anti-Doping Code. Furthermore, for judo coaches specifically, it is necessary that to understand Kano's philosophy, which is similar that of "the spirit of sport".

Question 7.9 regards coaches' knowledge of supplements. At present, there can be no guarantee of the purity of any commercial supplement. Supplements use among athletes is widespread [7,16], with by 62.7% of the Japanese national YOG team reporting that they used supplements for health and well-being [17]. It is necessary for coaches to raise athletes' awareness of the possibility that supplements may include substances prohibited under anti-doping regulations.

## Conclusion

The anti-doping survey revealed that it is now known that coaches in both countries are aware of the institutions that establish anti-doping rules and regulation, but that nevertheless, the views regarding the understanding of doping differ between the UK and Japan. Furthermore, there are similarities between the anti-doping fundamental rationale of intrinsic value in sport, as defined by the "Play True" philosophy, and Kano's ethos in judo of *jundo seisho*. Therefore, judo coaches around the world should be educated on anti-doping regimes.

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