

# Full-text publication of abstract-presented work in sport and exercise psychology

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## ABSTRACT

**Objectives** Meetings promote information sharing, but do not enable full dissemination of details. A systematic search was conducted for abstracts presented at the 2010 and 2011 Association of Applied Sport Psychology Annual Conferences to determine the full-text dissemination rate of work presented in abstract form and investigate factors influencing this rate.

**Methods** Systematic searches were sequentially conducted to determine whether the abstract-presented work had been published in full-text format in the 5 years following presentation. If a potential full-text publication was identified, information from the conference abstract (eg, results, number of participants in the sample(s), measurement tools used and so on) was compared with the full text to ensure the two entities represented the same body of work. Abstract factors of interest were assessed using logistic regression.

**Results** Ninety-four out of 423 presented abstracts (22.2%) were published in full text. Odds of full-text publication increased if the abstract was from an international institution, presented in certain conference sections or presented as a lecture.

**Conclusion** Those attending professional conferences should be cautious when translating data presented at conferences into their applied work because of the low rate of peer-reviewed and full-text publication of the information.

## INTRODUCTION

Evidence-based practice (EBP) is considered the ideal within healthcare and refers to the integration of clinical expertise, patient values and best available research evidence.<sup>1</sup> For the field of sport and exercise psychology to meet this ideal, it is important to conduct research and make it readily and widely available.

The Association for Applied Sport Psychology (AASP) Annual Conference provides an important forum for disseminating research findings relevant to the field. However, work presented in abstract form is often preliminary in nature, presented with limited details regarding study methodology, does not typically undergo rigorous peer review and is limited in availability to those not in attendance.<sup>2</sup> There may also

be significant discrepancies between data presented in abstract form and subsequent full-text publication.<sup>3 4</sup>

Publication in full-text format represents the 'gold standard' for disseminating research findings towards EBP. Full-text publication requires complete disclosure of work of a certain standard in order to pass the rigours of peer review, while publishing in indexed journals facilitates retrievability within the broader community. The full-text publication of work previously presented in abstract form provides a useful indicator of the quality of work being performed within a field and the extent to which it is being fully disseminated.

To assess the dissemination productivity of research presented at the 2010 and 2011 AASP Annual Conferences, the primary purposes of this study were (1) to determine the rate of full-text publication of work presented in abstract form at the conferences and (2) to investigate factors contributing to the publication of that work. Factors explored were limited to information obtainable from the published abstracts of poster and lecture presentations at the conferences. The secondary purposes were to document the features of the resulting full-text publications and to explore discrepancies between the information presented in abstract form and subsequent full-text publication.

## METHODS

### Abstract inclusion

All abstracts presented as a poster or lecture at the 25th and 26th AASP Annual Conferences in 2010 and 2011 were included. The AASP is the largest applied sport and exercise psychology organisation in the world and its annual conferences are the largest meetings devoted to sport and exercise psychology research.

### Abstract inclusion data extraction

Each abstract was entered into a database with the following information recorded: authors' names, abstract title, year of abstract



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presentation, presentation type (lecture vs poster), institution of origin of the abstract, section in which the abstract was presented, study design, whether the abstract focused on coaches, athletes or a combination of both (mixed), and whether the abstract was specific to a particular sport or not.

Institution of origin was determined from the primary/first-listed affiliation on the abstract, which was searched within the 2015 edition of the Carnegie Classification of Institutions of Higher Education.<sup>5</sup> Institution of origin was categorised according to the institution's basic classification within the Carnegie database as 'doctoral' (awarded at least 20 research/scholarship doctorates in 2013–2014), 'master's' (awarded at least 50 master's degrees in 2013–2014, but fewer than 20 research doctorates) or 'baccalaureate' (bachelor's degrees accounted for at least 50% of all degrees awarded and they awarded fewer than 50 master's degrees in 2013–2014). Non-listed institutions were categorised as either 'international' (ie, outside the USA) or 'other' (ie, non-degree-granting institution).

There were initially nearly 30 different presentation sections between the two conference years. In an effort to make analyses more manageable, the sections were reduced to the following eight that were representative of the original 30 sections: (1) transition through sport; (2) aspects of coaching; (3) mental skills/interventions; (4) specific populations/novelty approaches; (5) health issues; (6) aspects of groups; (7) professional and academia; and (8) emotional and behavioural aspects of sport and exercise.

Design of the work within the presented abstract was categorised as (1) analytical, (2) descriptive, (3) experimental, (4) qualitative, (5) mixed or (6) other, as defined according to study designs presented in Thomas *et al.*<sup>6</sup> Abstracts categorised as analytical presented in-depth study and evaluation of available information, usually in the form of a review or meta-analysis. Abstracts using a descriptive approach attempted to capture or describe patterns of thought or behaviours in a given group of people and were most commonly collected through surveys, but also included case studies, observational research and correlational studies. Abstracts categorised as experimental presented studies designed to estimate the casual impact of a variable on a target outcome using a randomised controlled or quasi-experimental (non-randomised) study design. Qualitative abstracts used interviews, focus groups or observational data. Abstracts categorised as mixed methods reported information collected using a combination of both quantitative and qualitative approaches. Abstracts categorised as other were those that did not clearly fit into the previous categories and had a tendency to be non-empirical studies proposing research that had not yet been conducted.

Population of focus referred to individuals included in the sample population. There were four categories: (1) athletes, (2) coaches, (3) mixed and (4) other. Mixed populations were samples of combined individuals,

such as coaches and athletes or sport psychologists and athletic trainers. Abstracts categorised as having other population of focus were individuals (eg, college or high school students) who were not well represented in the other categories.

### Systematic search for full-text publications

Systematic searches were sequentially conducted in Google Scholar, WorldCat, SPORTDiscus and PsycINFO to determine whether the abstract-presented work had been published in full-text format in the 5 years following presentation. The initial search was through Google Scholar given its access to hundreds of thousands of journal articles, reports and other peer-reviewed publications<sup>7</sup>; the subsequent search in WorldCat was conducted for this same reason. SPORTDiscus and PsycINFO were used given a high rate of indexing of journals relevant to sport and exercise psychology.

Publications were initially sought by searching for the title of the conference abstract and the first author's last name in Google Scholar. If the search did not yield any results, the title was removed from the search and replaced with keywords from the title, while keeping the first author's last name in the search. This strategy was repeated three times in Google Scholar with varying keywords and then again in WorldCat, SPORTDiscus and PsycINFO. If a potential full-text publication was identified, information from the conference abstract (eg, results, number of participants in the sample(s), measurement tools used and so on) was compared with the full text to ensure the two entities represented the same body of work.

The 5-year publication window was selected due to recommendations that work presented in abstract form be disseminated in a timely manner to maintain relevance, and previous research indicates that more than 90% of full-text publications occur in the 5 years following presentation of work in abstract form.<sup>8,9</sup> Full-text publications from conference abstracts published before the conference or outside of the 5-year window following the conference were recorded, but not included in the analyses.

### Full-text publication data extraction

Each full-text publication was reviewed and the following information was collected: publication title, authors' name, journal name, date of publication and impact factor of the publishing journal. When a specific publication date was not available, the date was set as the first day of the respective month for journals publishing 12 issues per year or the first day of the respective season for those publishing quarterly. Time from the conference abstract presentation date to full-text publication was calculated in months. Impact factors were obtained from the Institute of Scientific Information's Journal Citation Reports Science Edition for 2015.<sup>10</sup>

### Statistical analyses

Two-tailed analyses with  $\alpha=0.05$  were performed with IBM SPSS Statistics (V.24), unless otherwise specified. Counts

and percentages were used to summarise nominal data. Interval and continuous data were summarised using means and 95% CIs. The influences of AASP topic section, year of abstract presentation, presentation type, study design, institution of origin, population of focus in the study and focus on a specific sport on the odds that the abstract-presented work progressed to a full-text publication within 5 years following presentation were assessed using logistic regression, with ORs and 95% CIs being generated. A false discovery rate threshold set at  $q=0.05$  was used to correct for multiple comparisons.<sup>11</sup> Occurrence of full-text publication at 5 years was the outcome of interest; however, one minus survival plots graphing the percentage of abstracts that progressed to full-text publication as a function of time were generated for data visualisation.

## RESULTS

### Full-text publication rate

A total of 423 abstracts were presented at the 25th and 26th AASP Annual Conferences in 2010 and 2011 (table 1). Fifteen abstracts (3.8%) were published outside the 5-year publication time frame, with 14 published an average (SD) of 4.0 (2.3) months prior to their respective conference presentations and 1 abstract (0.2%) published 63.1 months after presentation. Abstracts published prior to and over 5 years after their conference presentation were not included in subsequent analyses. Under a quarter (23.0%; 94 out of 408) of the remaining presented abstracts were published in full text in the 5 years following conference presentation, with an average (SD) time to publication of 23.2 (15.6) months (median (IQR)=20.3 (9.1–31.5) months).

### Factors contributing to full-text publication

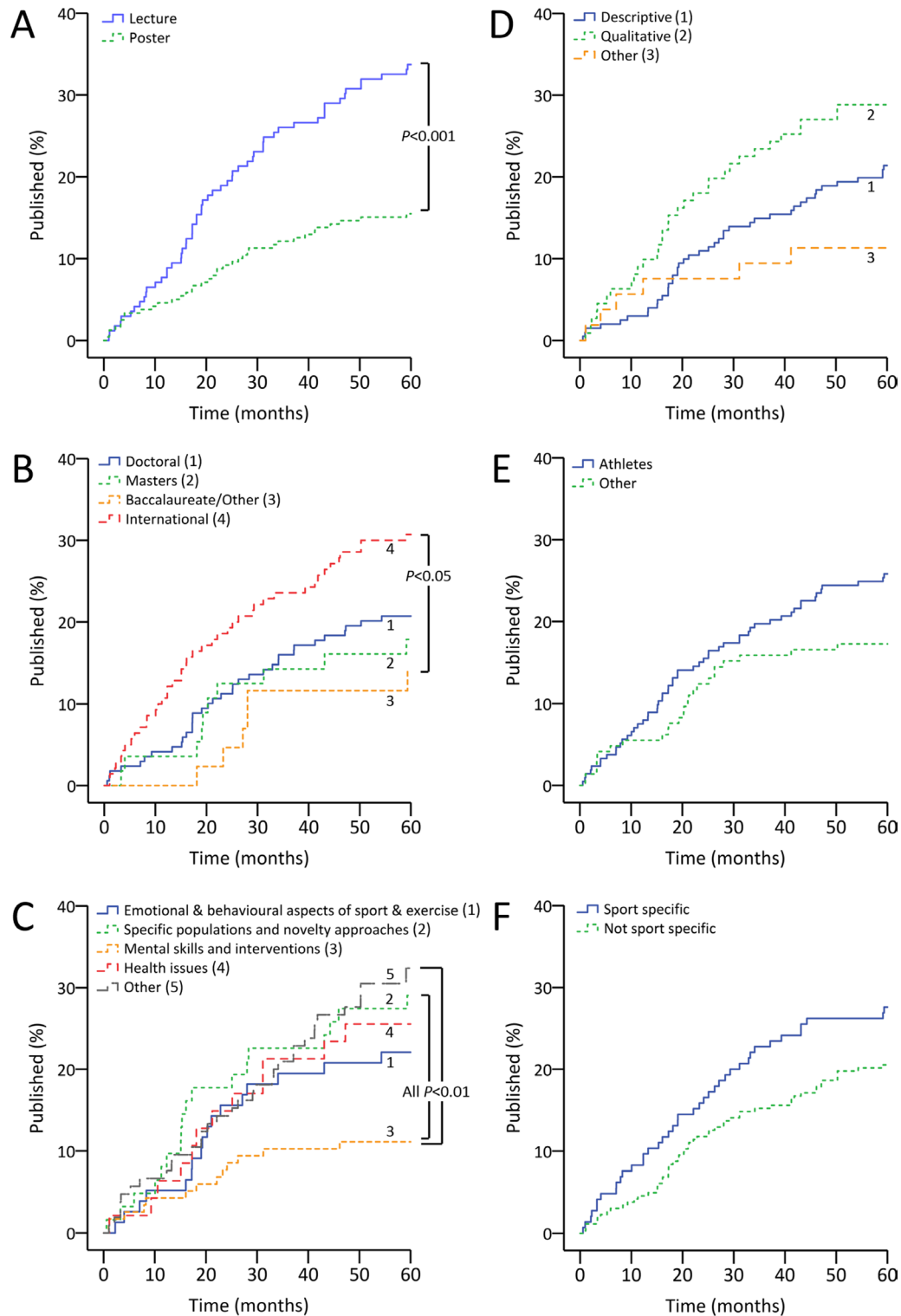
Full-text publication of abstract-presented work was not influenced by year of abstract presentation ( $P=0.79$ ; *data not shown*). In contrast, presentation type significantly impacted the full-text publication rate, with abstracts associated with a lecture presentation being 2.8 (95% CI 1.7 to 4.5) times more likely to be published than abstracts associated with a poster presentation ( $P<0.001$ ; figure 1A).

Abstracts originating from baccalaureate ( $n=8$ ) and 'other' ( $n=35$ ) institutions of origin were low in number and subsequently combined into a single 'baccalaureate/other' category for analyses (table 1). Abstracts from international institutions were 2.7 (95% CI 1.1 to 6.9) more likely to be published in full text than abstracts from baccalaureate/other institutions ( $P<0.05$ ) (figure 1B). The full-text publication rate of abstracts from international institutions did not differ from doctorate ( $P=0.06$ ) and master's ( $P=0.07$ ) institutions (figure 1B). Similarly, there were no differences in full-text publication rate between abstracts arising from baccalaureate/other, master's and doctorate institutions (all  $P=0.32$ – $0.64$ ; figure 1B).

**Table 1** Abstract characteristics

Variable	n (%)
Year of abstract presentation	
2010	215 (50.8)
2011	208 (49.2)
Presentation type	
Lecture	174 (41.1)
Poster	249 (58.9)
Institution of origin	
Doctorate	175 (41.4)
Master's	58 (13.7)
Baccalaureate	8 (1.9)
International	147 (34.8)
Other institutions	35 (8.3)
Study design	
Analytical	6 (1.4)
Descriptive	206 (48.7)
Experimental	18 (4.3)
Qualitative	117 (27.7)
Mixed	22 (5.2)
Other	54 (12.8)
Presentation section topic	
Transition through sport	36 (8.5)
Aspects of coaching	34 (8.0)
Mental skills/interventions	118 (27.9)
Specific populations/novelty approaches	62 (14.7)
Health issues	48 (11.3)
Aspects of groups	25 (5.9)
Professional and academia	17 (4.0)
Emotional and behavioural aspects of sport and exercise	83 (19.6)
Population of focus	
Athletes	218 (51.5)
Coaches	40 (9.5)
Mixed	15 (3.5)
Other	150 (35.5)

Abstracts presented within the transition through sport, aspects of coaching, aspects of groups, and professional and academia sections had full-text publication rates of 35.3% (12 out of 34), 40.0% (12 out of 30), 29.2% (7 out of 24) and 17.6% (3 out of 17), respectively. However, due to the low number of abstracts within each of these individual categories (<10% of all abstracts), they were combined into a single 'other' group for analyses of the influence of presentation section (table 1). Abstracts presented in the specific populations/novelty approaches and 'other' sections were 3.3 (95% CI 1.5 to 7.2) and 2.0 (95% CI 1.4 to



**Figure 1** Influence of (A) presentation type, (B) institution of origin, (C) Association for Applied Sport Psychology (AASP) conference section, (D) study design, (E) population of interest and (F) focus on a specific sport on full-text publication rate during the 5 years following abstract presentation at the 2010 and 2011 AASP conferences.

2.8) times more likely to be published in full text than abstracts presented in the mental skills/interventions section (all  $P < 0.01$ ; figure 1C). There were no differences in full-text publication rate of abstracts presented in the mental skills/interventions section compared with either the health issues ( $P = 0.02$ ) or emotional

and behavioural aspects of sport and exercise ( $P = 0.04$ ) sections, with the false discovery rate level of significance calculated at 0.01 (figure 1C). The full-text publication rate of abstracts presented in the specific populations/novelty approaches, health issues, emotional and behavioural aspects of sport and exercise, and 'other'



sections did not differ from one another (all  $P=0.13-0.69$ ; [figure 1C](#)).

Abstracts with analytical, experimental and mixed study designs had full-text publication rates of 50.0% (3 out of 6), 37.5% (6 out of 16) and 23.5% (4 out of 17), respectively. However, as each of these study designs individually accounted for <10% of all presented abstracts ([table 1](#)) and their methodology was distinct from abstracts within the 'other' study design group, they were omitted from analyses of the impact of study design. There were no differences in full-text publication rate between abstracts presenting descriptive, qualitative and 'other' study designs (all  $P=0.13-0.75$ ; [figure 1D](#)).

Abstracts with a focus on coaches or with a mixed focus had full-text publication rates of 25.7% (9 out of 35) and 33.3% (5 out of 15), but were too few in number to include in analyses of the impact of population of focus. Full-text publication rate did not differ between abstracts focused on athletes versus those focusing on other population ( $P=0.06$ ; [figure 1E](#)). Similarly, there was no difference in full-text publication rate of presented abstracts that were focused on a specific sport compared with those that were not ( $P=0.11$ ; [figure 1F](#)).

#### Full-text publication features

Full-text publications were published in 47 journals. Nearly half ( $n=23$ ) of the journals possessed an impact factor. Impact factors averaged (SD) 1.55 (0.73). Nearly a quarter (23.4%) of the full-text publications were published in two journals: *The Sport Psychologist* ( $n=12$ ; impact factor=1.1) and *Psychology of Sport and Exercise* ( $n=10$ ; impact factor=2.6).

#### Discrepancies between presented abstract and full-text publication

Changes within full-text publications derived from work presented in abstract form are shown in [table 2](#). Many of the changes were minor, such as title or author changes; 74% of full-text publications had a title change from the abstract to full-text publication and 57.4% of publications had a change in authors. Of the authorship changes, 29 (53.7%) of publications had an increase in the number of

authors, 7 (13%) had a decrease and 22 (40.7%) changed the order of authors. Major changes, such as changes in the sample size, were less common. Nearly 28% (26 out of 94) of published work had a sample size change, with 65.4% (17 out of 26) having an increased sample size and 34.6% (9 out of 26) having a decrease.

## DISCUSSION

### Full-text publication rate

Results from the current study indicate that fewer than a quarter (23%) of abstracts presented at the 2010 and 2011 AASP Annual Conferences were published in the 5 years following conference presentation. This is a lower conversion rate compared with the publication rates of conference presentations at medical and natural-science conferences, which tend to range from 26% to 74%.<sup>12</sup> The low publication rate of the current study extends findings from other studies indicating a similarly low publication rate for presentations at social science and humanities conferences.<sup>12</sup>

Possible explanations for the low abstract-to-full text publication rate of work presented at the 2010 and 2011 AASP Annual Conferences were not explored as we did not contact presenters to assess reasons for non-publication. However, based on data acquired across a diversity of disciplines, the single most common reason for non-publication is non-submission, which in turn results from (1) a lack of time or low priority; (2) study still being completed or manuscript in preparation; (3) study not for publication; (4) unimportant or negative result; (5) self-identified poor study quality or design; (6) fear of rejection; and (7) conflicts between authors or with sponsor/funder.<sup>13</sup> Also, it is likely that a portion of previously presented work was submitted for full-text publication, but did not meet the rigours of peer review.

A low abstract-to-full text publication rate is of concern as it has the potential to impact EBP decisions, particularly if the data that do not progress to full-text publication systematically differ from the fully published and retrievable data. The latter is often the case as submission and publication bias persists wherein studies reporting a non-significant finding are less likely to be submitted and/or published than those reporting a significant finding.<sup>14</sup> The consequence of publication bias is that the resulting meta-analyses, as part of a systematic review, have the potential to overestimate treatment effects and misinform EBP decisions.<sup>2</sup> The latter has been observed in studies of the efficacy of psychological treatment for major depressive disorder.<sup>15</sup> In addition to misinforming EBP, a low abstract-to-full text publication rate raises an ethical concern as it can indicate that subjects were exposed to any risks associated with research participation, but without the societal benefits that accompany the full dissemination of results.<sup>16</sup>

### Factors associated with full-text publication

In the absence of assessing reasons for non-publication, we examined and identified several abstract features that

**Table 2** Changes within full-text publications ( $n=94$ ) of work previously presented in abstract form

Variable	n (%)
Title change	74 (78.7)
Any change in authors*	54 (57.4)
Number of authors increased	29 (53.7)
Number of authors decreased	7 (13.0)
Order of authors changed	22 (40.7)
Sample size changed	26 (27.7)
Increased	17 (65.4)
Decreased	9 (34.6)

\*Percentages for specific changes are greater than 100% due to some publications that had multiple types of author changes.

increased the likelihood of progression to full-text publication. Full-text publication of abstracts presented at the 2010 and 2011 AASP Annual Conferences increased if the abstract was presented in a lecture format, the primary presenter was from an international institution and the abstract was presented in certain conference sections.

Presentation type was the single strongest predictor of full-text publication, with information presented in lecture form being nearly three times as likely to be published in full-text format compared with information presented in poster form. This finding is consistent with previous studies,<sup>2,14,17</sup> and indicates that abstract reviewers and meeting conveners for AASP Annual Conferences are able to identify and award more prestigious lecture presentations to work that is more likely to progress to full-text publication. We did not explore reasons for selection of lecture versus poster presentation, but it is likely that work accepted as a lecture presentation may have been submitted in a more developed and finalised format than work that was ultimately accepted as poster presentations and/or was of greater quality.

Nearly 35% of all abstracts presented at the 2010 and 2011 AASP Annual Conferences originated from foreign institutions, indicating a good degree of internationalisation at the meetings. Abstracts originating from international institutions were more than twice as likely to be published in full text than those originating from domestic institutions categorised as baccalaureate/other, and trended ( $P=0.06-0.07$ ) towards having a publication rate greater than abstracts originating from domestic master's and doctorate awarding institutions. It is possible that international institutions provided resources and support more favourably of scholarly work than domestic institutions or had more strict requirements regarding the full-text dissemination of work. Similarly, it is possible that individuals from international institutions submitted work of greater quality or completeness in order to enhance acceptance for presentation and their subsequent attendance at the AASP Annual Conference.

Abstracts presented within conference sections focused on specific populations or novelty approaches, and those categorised as other (ie, transition through sport, aspects of coaching, aspects of groups, and professional and academia) were more likely to be published in full text than abstracts presented in the mental skills/interventions conference section. While this result is somewhat surprising, given the basic premise of applied sport and exercise psychology is focused on mental skills and interventions, this may indicate new research trends within the field. If the work presented in these sections is more current with regard to what journals are aiming to publish, it follows that publication rates for these particular sections would be higher.

### Full-text publication features

Almost a quarter of the full-text publications were published in either *The Sport Psychologist* or *Psychology of Sport and Exercise*, confirming the important role these

journals play in disseminating information within the discipline. The remaining full-text publications (72 out of 94) were published in 45 other individual journals spanning a range of disciplines. The range of journals indicates the breadth of journals that publish work relevant to the field of sport and exercise psychology, and the diversity of the work undertaken by individuals within the field.

### Discrepancies between conference abstract and full-text publication

Title change was the most common discrepancy between the conference abstract and the full-text publication of that work. Change in authors, whether an increase, decrease or change in order, was also common; over half of full-text publications had at least one or more of these changes. A title or author change is not considered a major change because it does not alter the essence of the data collected or the methodology that was used between the conference presentation and the full-text publication. However, changes in sample sizes are more concerning. A decrease in the sample size, which was present in nearly 35% of publications identified as having a sample size change in the current study, indicated participants or groups of participants were omitted from the final full-text publication. Previous studies have reported this type of change<sup>4</sup> and, while there are likely valid reasons for removal of participants, it is important that the reason is stated in the full-text publication for full transparency.

### Study strengths and limitations

The systematic search for full-text publications of conference abstracts provides quantitative measure of publication productivity within the field of sport and exercise psychology. However, this approach is not without limitations. The 5-year window for the two annual AASP conferences may not be representative of all conference years; thus, the publication rates for years other than those explored in this study may vary greatly. Also, the current study did not thoroughly assess the factors contributing to the full-text publication rate of abstracts presented at the conference, nor did it include all potential influences on the publication rate. Additionally, a substantial change of the title within the full-text publication from the title used when the work was presented as an abstract title may have had a negative impact on locating the full-text publication and consequently the abstract-to-full-text publication rate. Finally, this systematic search was only done on the 2010 and 2011 AASP Annual Conferences and does not represent all conference-presented abstracts within the field of sport and exercise psychology.

### CONCLUSIONS

The current study indicates that fewer than a quarter of the papers presented in abstract form at the 2010 and 2011 AASP Annual Conferences progressed to full-text publication. It will be important to track progress of

publication productivity at later time points by replicating this study. This will allow the field of sport and exercise psychology to continue to gauge the impact of conference-presented research into practical application. In the meantime, those attending professional conferences should be cautious when translating data presented at conferences into their applied work because of the low rate of peer-reviewed and full-text publication of the information.

**Contributors** SS and SW developed the study and conducted the analyses. SS conducted the review of the conference programmes and the systematic search of published work. SS developed the manuscript. SW provided feedback and contributed to revisions of the manuscript.

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