



Evaluating SafeClub: Can risk management training improve the safety activities of community soccer clubs?

Kristy L Abbott, Paul Klarenaar, Alex Donaldson and Shauna Sherker

Br. J. Sports Med. published online 29 Nov 2007;
doi:10.1136/bjsm.2007.041467

Updated information and services can be found at:
<http://bjsm.bmj.com/cgi/content/abstract/bjsm.2007.041467v1>

These include:

Rapid responses

You can respond to this article at:
<http://bjsm.bmj.com/cgi/eletter-submit/bjsm.2007.041467v1>

Email alerting service

Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article

Notes

Online First contains unedited articles in manuscript form that have been peer reviewed and accepted for publication but have not yet appeared in the paper journal (edited, typeset versions may be posted when available prior to final publication). Online First articles are citable and establish publication priority; they are indexed by PubMed from initial publication. Citations to Online First articles must include the digital object identifier (DOIs) and date of initial publication.

To order reprints of this article go to:
<http://journals.bmj.com/cgi/reprintform>

To subscribe to *British Journal of Sports Medicine* go to:
<http://journals.bmj.com/subscriptions/>

Evaluating SafeClub: Can risk management training improve the safety activities of community soccer clubs?

Authors:

Kristy Abbott, Youthsafe, Moorong Spinal Unit, Royal Rehabilitation Centre, Sydney, Australia

Paul Klarenaar, Health Promotion, Manly Hospital, Northern Sydney and Central Coast Health, Sydney, Australia

Alex Donaldson, School of Human Movement and Sport Sciences, University of Ballarat, Victoria, Australia and formerly of Northern Sydney Area Health Service

Shauna Sherker, Injury Risk Management Research Centre, University of New South Wales, Sydney, Australia

Keywords: Sports injuries, risk management, community, soccer

Word count: 2,963 words

ABSTRACT

Objective: To evaluate a sports safety-focused risk management training program.

Design: Controlled pre–post test.

Setting: Four community soccer associations in Sydney, Australia.

Participants: 76 clubs (32 intervention, 44 control) at baseline, 67 clubs (27, 40) at post season and 12 month follow-up.

Intervention: SafeClub—a sports safety-focused risk management training program (3 x 2 hour sessions) based on adult learning principles and injury prevention concepts and models.

Main outcome measures: Changes in mean Policy, Infrastructure and Overall Safety scores as measured using a modified version of the Sports Safety Audit Tool.

Results: There was no significant difference in the mean Policy, Infrastructure and Overall Safety scores of intervention and control clubs at baseline. Intervention clubs achieved higher post-season mean Policy (11.9 intervention vs. 7.5 controls), Infrastructure (15.2 vs. 10.3) and Overall Safety (27.0 vs. 17.8) scores when compared with controls. These differences were greater at 12 month follow-up: Policy (16.4 vs. 7.6); Infrastructure (24.7 vs. 10.7); and Overall Safety (41.1 vs. 18.3). General Linear Modelling indicated that intervention clubs achieved statistically significantly higher Policy ($p<0.001$), Infrastructure ($p<0.001$) and Overall Safety ($p<0.001$) scores when compared to control clubs at post-season and 12 month follow-up. There was also a significant linear interaction of Time and Group for all three scores: Policy ($p<0.001$), Infrastructure ($p<0.001$) and Overall Safety ($p<0.001$).

Conclusions: SafeClub effectively assisted community soccer clubs to improve their sports safety activities, particularly the foundations and processes for good risk management practice, in a sustainable way.

INTRODUCTION

Sports injuries are a public health issue that incur a high personal, social and economic cost.[1-3] Injury, and the fear of injury, are barriers to physical activity participation[4,5] and addressing sports injuries is a public health priority.[6,7]

Most sports injuries are preventable[8,9] and sports governing bodies have a legal and ethical responsibility to endeavour to prevent injuries by identifying, assessing and controlling the risks associated with their sport.[10] The application of risk management principles to sports safety has been advocated for internationally[10-13] and in Australia.[9,14,15] Risk management has been described as “the culture, processes and structures that are directed towards realizing potential opportunities whilst managing adverse effects”.[16] Risk management underpins occupational health and safety practices in most sectors.[17]

The sport/leisure sector has not recognised the importance of risk assessment[10] nor the support needs of community sports clubs to conduct safety-related risk management.[18] An Australian standard is available for managing risk in sport and recreation,[16] and resources and training are available to support sporting organisations with risk management.[11,19,20] However, sports-related risk management has tended to have a legal/insurance viewpoint rather than a public health/injury prevention perspective.[21] In the peer-reviewed literature there is no information about the development, adoption, evaluation or dissemination of currently available sports safety-related risk management resources or training.

The aim of this study was to evaluate SafeClub—a sports safety and injury prevention-focused risk management training program for community sports clubs. The evaluation measured the impact of SafeClub on the sports safety activities (i.e. sports safety-related risk management policies and infrastructure) of participating community soccer (football) clubs in Sydney, Australia. While SafeClub was designed for use with all community sports, soccer was considered the most suitable sport in which to conduct the evaluation. Soccer is popular,[22] has a relatively well understood injury profile,[23,24] has poor safety policies and practices compared to other Australian community sports,[18,25] and is a priority for injury prevention action in Australia.[26]

METHODS

A controlled pre–post test study design was used. The Northern Sydney Area Health Service Human Research Ethics Committee approved the study.

Sample

Soccer New South Wales (NSW) identified four affiliated community soccer associations in the Greater Sydney region to participate in the study based on their knowledge of each association’s capacity, infrastructure and interest. Two pairs of similar associations were recruited. The associations were considered similar in: size (number of affiliated clubs); budget; size of committee; paid administration hours; association policies; and support for affiliated clubs. One association from each similar pair was randomly allocated to each arm of the study—intervention (SafeClub) or control (usual sports safety activities).

Clubs affiliated with the participating associations were invited to join the study via presentations at association Annual General Meetings in 2004. Following the presentations, each club was contacted by telephone to arrange a suitable baseline data collection time. Clubs in the same association were allocated to the same arm of the study.

Intervention

SafeClub is a training program based on a 5-stage model of risk management: risk identification; risk assessment; risk management; implementation and evaluation.[9,21] SafeClub was developed following a survey that identified that few community soccer clubs adopted a strategic approach to safety or had the infrastructure to implement sustainable injury prevention initiatives.[27] Additional informal consultations with regional sports associations and community clubs also suggested that the safety issues of concern varied significantly from club to club depending on the club's: size; facilities; human resources; location; and player and spectator characteristics. SafeClub was developed to assist clubs to identify and manage their specific safety issues, rather than adhere to a prescribed set of safety activities that may not be relevant to their needs.

SafeClub delivery consists of three, two-hour training sessions based on adult learning principles including using practical, problem-centred learning strategies that capitalise on participants' knowledge and experience. In between sessions, participants are asked to 'try-out' ideas discussed during the training and report on progress at their club. The process for identifying and selecting risk management strategies are based on injury prevention concepts and models.[28] Participating clubs are encouraged to develop a sustainable, club-specific Sports Safety Manual by the end of the training. SafeClub was piloted and presented, in modified form, as a workshop at a national scientific conference[29] before being evaluated in this study. SafeClub was delivered in mid-2005, in the middle of the community soccer season.

Data collection

Demographic and sports safety activity information were gathered from participating clubs using a modified version of the Sports Safety Audit Tool (SSAT).[30] The SSAT modifications were based on a review of sports injury prevention best practice which advocated for the development and implementation of sports safety plans using risk management processes including: delegating responsibility for safety; prioritising key issues; considering first aid and protective equipment; hazard inspections; and a review component.[9,15] The modified SSAT used in this study is available from the authors upon request.

Each participating club completed the 72-item modified SSAT three times—at the start of the 2005 season (baseline), at the end of 2005 season (post-season) and mid-2006 season (12 month follow-up). Clubs unable to be contacted after four telephone attempts were considered non-respondents at each data collection stage. Most interviews were conducted using a standard interview protocol during a face-to-face meeting with a club representative. However, nine of the 12 month follow-up interviews were conducted over the telephone. Presidents and secretaries were the preferred representatives and interviews were conducted at times and locations convenient to participants—usually after-hours at their club, home or workplace.[30]

Statistical analysis

A scoring system was developed for the SSAT prior to the commencement of the study. Items that the researchers considered reflected fundamental and wide-reaching risk management practices identified in the literature[9,15,18] were scored more highly than specific, individual items considered to be less important to sports safety. For example, a documented sports safety/risk management plan scored five points whilst having safety as a regular item on committee meeting agendas' scored two points and having a sun protection policy scored 0.5 points. The maximum possible Overall Safety score of 65 was made up of a maximum Policy score of 24 (from 30 Policy items) and a maximum Infrastructure score of 41 (from 26 Infrastructure items).

The required sample size was estimated to be 33 clubs in each arm of the study. This assumed 80% power to detect a post intervention difference of 15% in Infrastructure score and 20% in Policy score at a statistical significance level of 0.05 and a drop out rate of 40%. The Independent Sample t-test was used to compare the demographic data of control and intervention clubs, and of clubs that were retained in the study and those that dropped out. Pearson's Chi-Squared test was used to compare the proportion of intervention and control clubs responding positively to individual items at baseline, post-season and 12 month follow-up. A mean score was calculated for two items ('safety activities undertaken in past 12 months' and 'other documented safety policy') and compared at baseline, post-season and 12 month follow-up for intervention and control clubs using the Independent Sample t-test. Policy, Infrastructure and Overall Safety scores were compared at baseline, post-season and 12 month follow-up using a General Linear Model for repeat measures with Time—baseline, post-season and 12 month follow-up—as the within subject factor and Group—intervention or control—as the between subject factor. P-values <0.05 and 95% Confidence Intervals (CI) were used to demonstrate statistical significance. All data was analysed using SPSS (v 10.0[0]).

RESULTS

Thirty-two of a possible 50 intervention clubs (64% response rate) and 44 of a possible 51 (86% response rate) control clubs were enrolled in the study at baseline. Twenty-seven intervention clubs and 40 control clubs were still enrolled at post-season. There was no significant difference between the retention rates for intervention (84%) and control clubs (91%) [$\chi^2(1, n = 76) = 0.758, p = 0.384$]. All clubs enrolled at post-season were retained at 12 month follow-up.

Of the 76 clubs enrolled at baseline, 49% were represented by the club secretary, 38% by the president, 4% by the treasurer and 9% by others (coaches, sports trainers etc.). Most (86%) clubs were incorporated and 3% employed a paid administrator. The mean age of clubs was 31.9 years (S.D 17.9). Three quarters (75%) of the clubs were >20 years old and 9% were <5 years old (range 1–86 years).

At baseline, the participating clubs varied in size from 7–113 registered teams (mean 39.2, S.D. 26.5) with 70–1369 registered players and 4–28 committee members. Approximate annual budgets ranged from \$A1,000–\$A325,000 (mean \$95,396, S.D. 73760). There were no significant differences between intervention and control clubs on the demographic items measured except that intervention clubs were bigger (mean 47.7 vs. 32.9 teams, 95% CI for difference 2.9–26.8) and had more registered players

aged 12 years or under (mean 324.3 vs. 202.8, 95% CI for difference 35.4–207.7).
Table 1 shows the demographics of intervention and control clubs at baseline.

Table 1: Mean (standard deviation) for club demographics of intervention and control clubs at baseline

	Intervention clubs (n=32)	Control clubs (n=44)	95% CI for the difference based on t-test
No. of teams	47.7 (30.6)	32.9 (21.2)	2.9–26.8
No. of registered players	610.8 (384.2)	458.5 (286.9)	-4.2–308.9
No. of players 12 years or under	324.3 (202.7)	202.8 (146.9)	35.4–207.7
No. of players 13–18 years	123.6 (84.4)	109.5 (72.7)	-24.5–52.7
No. of players 19–34 years	114.5 (89.3)	95.2 (61.6)	-18.3–56.9
No of players 35+ years	48.0 (47.1)	36.4 (39.0)	-9.4–32.6
No. of committee members	12.5 (5.1)	10.5 (4.9)	-0.2–4.4
Annual budget	\$A108,929 (92,099)	\$A85,155 (55,317)	-\$A12,955.– \$A 60,500

Note: Not all clubs provided information for each item so the n for each item varies and the mean is calculated based on the n for each item (range: intervention clubs 28–32, control clubs 35–44).

Tables 2 and 3 shows the proportions of intervention and control clubs that responded positively on each modified SSAT Policy and Infrastructure item respectively. The mean modified SSAT scores are provided for the items where respondents could report more than one activity (i.e. ‘safety activities undertaken in the past 12 months’ and ‘other documented safety policy’) at baseline, post-season and 12 month follow-up.

Table 2: The modified SSAT Policy items, scores and proportion of positive responses and Chi-Squared p-values for Intervention (I) and Control (C) clubs at baseline, post-season and 12 month follow-up. (#Note: a mean score and a p-value for Independent Sample t test is given for the item ‘Other documented safety policy’)

Policy Items	Item score	Baseline			Post-season			12 month follow-up		
		I (n=32)	C (n=44)	χ^2 p-value	I (n=27)	C (n=40)	χ^2 p-value	I (n=27)	C (n=40)	χ^2 p-value
A documented sports safety/risk management policy	5	22%	29%	.453	63%	25%	.002*	89%	35%	<.001*
A current documented sports safety plan	2	16%	11%	.587	41%	17%	.035*	74%	12%	<.001*
Current sports safety plan includes:										
safety priorities	1	19%	14%	.546	33%	5%	.002*	74%	7%	<.001*
individual responsibilities	1	19%	11%	.366	37%	10%	.008*	59%	7%	<.001*
time frames	1	9%	4%	.402	30%	10%	.040*	48%	2%	<.001*
review process	1	19%	16%	.745	30%	5%	.006*	67%	0%	<.001*
A documented policy on:										
Emergency action/severe injury	0.5	37%	41%	.764	59%	37%	.080	59%	40%	.122
Head injuries	0.5	16%	20%	.592	33%	22%	.326	52%	20%	.006*
Pre-participation health screening	0.5	25%	23%	.818	22%	25%	.794	52%	15%	.001*
Blood Rule	0.5	62%	75%	.242	74%	70%	.717	78%	40%	.002*
Infectious diseases – other than Blood Rule?	0.5	25%	11%	.119	41%	25%	.173	67%	50%	.177
Sun protection	0.5	25%	23%	.818	44%	30%	.226	48%	17%	.007*
Qualifications of referees	0.5	31%	23%	.405	26%	10%	.084	22%	25%	.794
First-aiders/sports trainers at competition	0.5	3%	16%	.073	11%	17%	.472	22%	12%	.292
First-aiders/sports trainers at training	0.5	0%	7%	.132	4%	5%	.801	7%	2%	.341
Safety inspection of home ground facilities	0.5	19%	23%	.675	41%	27%	.258	63%	17%	<.001*
Safety inspection of playing surfaces before competition	0.5	44%	32%	.287	44%	35%	.436	70%	32%	.002*
Safety inspection of playing surfaces before training	0.5	16%	18%	.770	33%	20%	.219	37%	17%	.071
Wearing/use of protective equipment during competition	0.5	100%	93%	.132	96%	90%	.336	100%	97%	.408
Wearing/use of protective equipment during training	0.5	87%	79%	.363	89%	77%	.233	96%	80%	.055
Participation of players under the influence of alcohol	0.5	41%	34%	.560	41%	25%	.173	89%	50%	.001*
Drugs in sport	0.5	25%	32%	.518	41%	22%	.110	44%	30%	.226
Code of Conduct/Fair Play policy for players	0.5	97%	95%	.754	96%	97%	.776	96%	97%	.776
Code of Conduct for people attending competitions	0.5	100%	91%	.080	96%	97%	.776	100%	97%	.408
Modified rules for juniors	0.5	97%	93%	.477	96%	95%	.801	96%	85%	.138
Child protection	0.5	97%	89%	.188	100%	95%	.238	96%	92%	.520
Pregnant players	0.5	47%	29%	.122	41%	30%	.364	48%	32%	.197
Adverse weather and safety	0.5	66%	52%	.244	59%	40%	.122	78%	52%	.036*
Other documented safety policy *(mean score and p-value for Independent Sample t test)	0.5/policy max = 1.5	0.25	0.33	.397	0.46	0.32	.249	0.70	0.12	<.001*

Table 3: The modified SSAT Infrastructure items, scores and proportion of positive responses and Chi-Squared p-values for Intervention (I) and Control (C) clubs at baseline, post-season and 12 month follow-up. (#Note: a mean score and a p-value for Independent Sample t test is given for the item ‘safety activities undertaken in past 12 months’)

Infrastructure Items	Item score	Baseline			Post-season			12 month follow-up		
		I (n=32)	C (n=44)	χ^2 p-value	I (n=27)	C (n=40)	χ^2 p-value	I (n=27)	C (n=40)	χ^2 p-value
Keep a record of injuries that:										
result in an insurance claim	0.5	78%	82%	.690	85%	85%	.983	81%	87%	.587
require attendance to hospital	0.5	34%	64%	.012*	56%	60%	.718	67%	67%	.943
require attending a medical practitioner/health professional	0.5	16%	48%	.004*	44%	52%	.518	44%	30%	.226
result in missing a match	0.5	16%	34%	.071	26%	40%	.234	37%	15%	.038*
require first aid	0.5	12%	23%	.256	30%	25%	.675	41%	30%	.364
other injuries	0.5	0%	9%	.080	15%	10%	.551	4%	5%	.801
Collects injury risk information from:										
Research (internet, library, etc.)	0.5	25%	18%	.472	37%	12%	.018*	56%	20%	.003*
Soccer NSW /Football Federation Australia	0.5	81%	82%	.950	70%	92%	.016*	93%	85%	.347
Club safety audits	0.5	6%	14%	.300	26%	15%	.267	63%	35%	.024*
Other sources	0.5	19%	18%	.950	18%	17%	.915	0%	2%	.408
Reviewed injury records and injury risk information in the last 12 months	5	31%	25%	.547	30%	22%	.511	56%	22%	.006*
Informed the following groups about club safety activities in the last 12 months:										
players	0.5	59%	59%	.980	48%	30%	.132	70%	40%	.015*
coaches	0.5	87%	84%	.677	89%	67%	.044*	93%	75%	.065
Committee members	0.5	84%	82%	.770	96%	72%	.013*	100%	75%	.005*
Referees and other officials	0.5	19%	32%	.201	11%	12%	.863	33%	12%	.040*
Safety budget	2	3%	7%	.477	4%	5%	.801	18%	7%	.172
Safety committee or coordinator	5	6%	14%	.300	33%	12%	.040*	70%	15%	<.001*
Acted upon current sports safety plan	4	3%	7%	.477	22%	13%	.314	67%	5%	<.001*
Safety activities undertaken in past 12 months (mean score and p-value for Independent Sample t test) #	0.5/activity max = 4	1.20	1.11	.667	1.52	1.07	.024*	1.70	0.78	<.001*
Safety a regular agenda item at club committee meetings	2	22%	27%	.592	56%	12%	<.001*	74%	30%	<.001*
Consulted about injury risks in the last 12 months										
players	0.5	50%	45%	.695	23%	27%	.688	33%	17%	.136
coaches	0.5	66%	68%	.815	78%	70%	.481	81%	45%	.003*
Committee members	0.5	66%	64%	.858	93%	75%	.065	100%	65%	.001*
Referees and other officials	0.5	3%	14%	.118	7%	12%	.504	30%	22%	.511
Reviewed sports safety policies and plans in last 12 months	5	28%	21%	.471	67%	25%	.001*	74%	37%	.003*

At baseline there were two items to which a significantly higher proportion of control than intervention clubs responded positively. Control clubs were more likely to report keeping a record of injuries that required attending a hospital [64% vs 34%, $\chi^2(1, n = 76) = 6.359, p = 0.012$] and injuries that required attending a general practitioner/health professional [48% vs 16%, $\chi^2(1, n = 76) = 8.483, p = 0.004$].

At post-season, a significantly higher proportion of intervention clubs than control clubs responded positively to 13 items. A significantly higher proportion of control clubs responded positively [92% vs 70%, $\chi^2(1, n = 67) = 5.753, p = 0.016$] to one item, 'Collects injury risk information from Soccer NSW /Football Federation Australia', at post-season. The post-season trend of intervention clubs responding more positively continued at 12 month follow-up with a significantly higher proportion of intervention clubs responding positively to 30 of the 56 items. There were no items to which a significantly higher proportion of control clubs responded positively at 12 month follow-up.

Figure 1 shows the mean Policy, Infrastructure and Overall Safety scores for control and intervention clubs at baseline, post-season and 12 month follow-up.

Figure 1: Mean Policy, Infrastructure and Overall Safety scores for control and intervention clubs at baseline, post-season and 12 month follow-up

Insert Figure 1 here

The General Linear Modelling indicated that the effect of Time was significant for Policy [F(2,130) = 31.32, p<0.001], Infrastructure [F(2,130) = 30.29, p<0.001] and Overall Safety [F(2,130) = 45.38, p<0.001] scores. Importantly, there was a significant linear interaction of Time and Group for all three scores: Policy [F(2,130) = 31.16, p<0.001], Infrastructure [F(2,130) = 28.20, p<0.001] and Overall Safety [F(2,130) = 43.45, p<0.001].

There was no significant difference in the baseline demographic characteristics or Policy, Infrastructure and Overall Safety scores of clubs that were retained in the study (n = 67) compared to those that dropped out (n = 9). The only item at baseline to which a significantly different proportion of retained than drop out clubs responded positively was in having a 'documented sports safety/risk management policy'—retained 22% vs dropped out 56%; [$\chi^2(1, n = 76) = 4.501, p = 0.034$]

DISCUSSION

To our knowledge, this is the first evaluation of a risk management-focused sports safety training program for community sports clubs published in the reviewed literature. Most previous sports safety and injury prevention research has focused on the first two stages of van Mechelen's four-stage model of sports injury prevention—establishing the extent of the problem, and the aetiology and mechanisms of injury.[31] This study evaluates an intervention to assist in the implementation of best practice. In terms of the TRIPP framework for sports injury prevention research proposed by Finch,[33] this study fits into Stage 5—understanding how evidence-based practice can be translated into actions that can be implemented in real-world circumstances.

The results of this study strongly suggest that SafeClub achieved its aim of assisting community soccer clubs to improve their sports safety activities. There is also evidence that improvements reported by participating clubs were sustained, if not increased, over time. Interestingly, at 12 month follow-up, a significantly higher proportion of the clubs that participated in the SafeClub training responded positively to nine of the ten items that were given a weighting of two points or more (i.e. were considered fundamental and wide-reaching risk management practices). This suggests that SafeClub was particularly effective at enabling clubs to lay the foundations for good risk management practices through: establishing core infrastructure (e.g. appointing a safety committee/coordinator); putting key processes in place (e.g. regularly reviewing injury records/risk information to inform plans, having safety as a committee meeting agenda item, acting upon and reviewing safety plans in a timely manner etc.); and writing and regularly reviewing comprehensive safety policies and plans. A higher proportion of SafeClub trained clubs also reported having a specific safety budget at 12 month follow-up but the difference did not reach statistical significance.

The application of risk management principles to the development of sports safety plans has been widely called for[9-16,19,20] despite there being little evidence directly linking risk management to a reduction in sports injuries. Given the difficulty and cost of obtaining reliable community sports injury data[34,35] and the limited resources available for this study, the outcome measure of interest in this study was indicators of good sports safety practice rather than injury rates. Whether the sports safety activities adopted by participating clubs were effective in reducing injuries is a separate question more aligned to Stage Four of the TRIPP framework—ideal conditions/scientific evaluation of preventive measures[33] or Stages Three and Four of van Mechelen’s model—introducing preventive measures and assessing their effectiveness.[31] The critical factor for SafeClub in this context was that it encouraged, supported and resourced evidence-based planning[36] which enabled participants to develop sustainable safety activities tailored to meet the unique circumstances of their club.

There were several safety activities that >80% of participating clubs reported implementing at baseline. For example, nearly all clubs reported having documented policies on: wearing/using protective equipment at competition and training; the conduct of players and others attending competitions; modified rules for juniors; and child protection. In addition, >80% of participating clubs reported that they collected injury risk information from the state governing body for the sport (Soccer NSW), and >60%: had a written blood rule; kept records of injuries that generated insurance claims; and regularly informed and consulted with coaches and committee members about safety. These findings suggest that safety was already on the agenda in some way at many participating clubs, perhaps as a result of Soccer NSW having previously introduced specific organisation-wide policies.

The limitations of this study need to be acknowledged. The community soccer associations that participated in this study were not randomly selected. They, and their affiliated clubs, may have been significantly different to other associations and clubs. However, any selection bias was minimised by the random assignment of similar pairs of associations to intervention or control arms of the study. Self reporting by participants and the non-blinding of participants and researchers introduced the

potential for interviewer bias and social desirability biases among participating club. This bias was minimised with the use of a validated modified SSAT,[30] a standard interview protocol and interviewer training. The potential for contamination between intervention and control clubs was limited as selected associations were geographically distant from each other and clubs from the same association were assigned to the same arm of the study. Although there was no significant difference in demographics or SSAT scores between clubs that dropped out of the study and those that were retained, it is possible that there were significant differences between clubs that agreed to participate in the study at baseline and those that did not. However, response rates were good and, in the 'real world', only those clubs that are interested and have the capacity, will participate in an intervention such as SafeClub. Intervention clubs were larger than control clubs (i.e. had more teams) and had more young players (i.e. 12 years or under) which may have provided them with greater capacity and motivation to improve their safety activities. However, this is unlikely as there was no difference in the size of the committees or annual budgets of the two groups of clubs suggesting that the human and financial resources available to the two groups were similar. The effects of clustering of clubs by associations were not taken into account in the statistical analysis but, given the magnitude of the differences observed, this is unlikely to have significantly impacted upon the findings [37].

CONCLUSION

SafeClub was developed in response to an identified need and is based on sound injury prevention concepts and adult learning principles. It was also extensively piloted prior to being evaluated. This evaluation has demonstrated that SafeClub is an effective tool for assisting community soccer clubs in Greater Sydney, Australia to improve their sports safety activities in a sustainable way. It appears to be particularly effective in assisting clubs to develop and improve the foundations and processes for good risk management practice. Further research is now required to determine if the success of SafeClub is transferable to other community sports with different organisational and administrative systems and in other geographic locations. Further research is also required to determine if community sports clubs that develop and implement safety plans and policies based on risk management principles do reduce the risk of injury associated with participation in their club activities. The authors will now develop and implement a dissemination strategy for SafeClub to ensure it is widely available and the quality of its content and delivery are refined and maintained.

ACKNOWLEDGEMENTS

The authors would like to thank Soccer NSW and the administrators of participating associations and clubs for their support and participation in this study. We would also like to thank Gillian Cross, who worked as a project officer on this study. Shauna Sherker was supported by a Public Health Research Training Fellowship from the National Health and Medical Research Council, Australia. Caroline Finch is thanked for her statistical and study design advice.

COMPETING INTERESTS

None

FUNDING

SafeClub was developed and piloted with the assistance of the Safe Community Programs in NSW Small Projects Funding Scheme. This study was part funded by the NSW Sporting Injuries Committee—Research and Injury Prevention Scheme.

REFERENCES

1. Finch C, Cassell E. The public health impact of injury during sport and active recreation. *J Sci Med Sport* 2006;**9**:490-497.
2. Conn J, Annett J, Gilchrist J. Sports and recreation related injury episodes in the US population, 1997-99. *Inj Prev* 2003;**9**:117-123.
3. Nicholl J, Coleman P, Williams B. The epidemiology of sports and exercise related injury in the United Kingdom. *Br J Sports Med* 1995;**29**(4):232-238.
4. Boufous S, Finch C, Bauman A. Parental safety concerns—a barrier to sport and physical activity in children? *Aust N Z J Public Health* 2004;**28**:482-486.
5. Finch C, Owen N. Injury prevention and the promotion of physical activity: what is the nexus? *J Sci Med Sport* 2001;**4**(1):77-87.
6. Commonwealth Department of Human Services and Health. Better health outcomes for Australians. National goals, targets and strategies for better health outcomes into the next century. Canberra: Commonwealth of Australia, 1994.
7. Commission of the European Communities. Communication from the Commission to the European Parliament and the Council on Actions for a Safer Europe. 2006
http://ec.europa.eu/health/ph_determinants/environment/IPP/documents/com_328_en.pdf (Accessed March 2007)
8. Parkkari J, Kujala U, Kannus P. Is it possible to prevent sports injuries? Review of controlled clinical trials and recommendations for future work. *Sports Med* 2001;**31**(14):985-995.
9. Finch C, McGrath A. SportSafe Australia: A national sports safety framework. A report prepared for the Australian Sports Injury Prevention Taskforce. Canberra: Australian Sports Commission, 1997.
10. Fuller C, Drawer S. The application of risk management in sport. *Sports Med* 2004;**34**(6):349-356.
11. Coalition of Americans to Protect Sports. Sports injury risk management and the keys to safety. North Palm Beach, FL: Coalition of Americans to Protect Sports, 1990.
12. Watson R. Risk management: a plan for safer activities. *Journal - Canadian Association of Health Physical Education and Recreation* 1996;**62**(1):13-17.
13. Cotton D. Risk management—a tool for reducing exposure to legal liability. *The Journal of Physical Education, Recreation and Dance* 1993;**64**(2):58-61.
14. Otago L, Brown L. Risk management models in netball. *J Sci Med Sport* 2003;**6**(2):216-225.

15. National Injury Prevention Advisory Council. Directions in injury prevention Report 2: injury prevention interventions - good buys for the next decade. Canberra: Commonwealth Department of Health and Aged Care, 1999.
16. Standards Australia. Guidelines for managing risk in sport and recreation: HB 246-2004. Sydney, 2002.
17. St John Holt A. Principles of health and safety at work 3rd ed. Leicester: IOSH Publishing, 1995.
18. Department of Health and Aging. Sports safety in Australia: An update July 2003. Commonwealth of Australia, 2004.
19. New South Wales Department of Sport and Recreation. It's your business: A practical resource for directors of sport and recreation organisations: Government of New South Wales, 2003.
20. Sports Medicine Australia. Smartplay: Planning for sports safety. 2001 http://www.smartplay.net/plann_sportssafe/plann_sportssafe.html (Accessed March 2007)
21. Harvey D, Finch C, McGrath A. Sports safety plans: managing the risk of sports injuries. *Sport Educator* 1998;**10**(2):12-15.
22. Federation Internationale de Football Association (FIFA). Approximately 250 million footballers world wide. 2000 http://images.fifa.com/images/pdf/IP-199_01E_big-count.pdf (Accessed March 2007)
23. Aglietti P, Zaccherotti G, De Biase P, *et al.* Injuries in soccer: mechanism and epidemiology. In: Renström P, editor. *Clinical practice of sports injury prevention and care*. Cambridge: Blackwell Scientific Publications, 1994:277-293.
24. Dvorak J, Junge A. Football injuries and physical symptoms: a review of the literature. *Am J Sports Med* 2000;**28**:S3-S9.
25. Donaldson A, Forero R, Finch C. The first aid policies and practices of community sports clubs in northern Sydney, Australia. *Health Promot J Austr* 2004;**15**(2):156-162.
26. Egger G. Sports injuries in Australia: causes, cost and prevention. *Health Promot J Austr* 1991;**1**(2):28-33.
27. Donaldson A, Hill T, Brnabic A, *et al.* The sports safety policies and practices of community soccer clubs on the Northern Beaches and in the Hornsby-Ryde-Ku-ring-gai region of Northern Sydney. 2002 http://www.nsh.nsw.gov.au/healthinfo/healthprom/reports/sport/SportReport_Soccer.pdf (Accessed March 2007)

28. McClure R, Stevenson M, McEvoy S. *The scientific basis of injury prevention and control*. Melbourne: IP Communications, 2004; 34-41.
29. Donaldson A, Abbott K. Sports safety planning for community sports clubs: The development and piloting of a training course. *J Sci Med Sport* 2003;**6**(4 suppl 1):71.
30. Donaldson A, Hill T, Finch C, *et al*. The development of a tool to audit the safety policies and practices of community sports clubs. *J Sci Med Sport* 2003;**6**(2):226-230.
31. van Mechelen W, Hlobil H, Kemper H. Incidence, severity, aetiology and prevention of sports injuries: A review of concepts. *Sports Med* 1992;**14**(2):82-99.
32. Chalmers D. Injury prevention in sport: not yet part of the game? *Inj Prev* 2002;**8**(suppl 4):iv22-iv25.
33. Finch C. A new framework for research leading to sports injury prevention. *J Sci Med Sport* 2006;**9**:3-9.
34. Braham R, Finch C. The reliability of team-based primary data collectors for the collection of exposure and protective equipment use data in community sport. *Br J Sports Med* 2004;**38**(4):e15-.
35. Gabbe B, Finch C, Bennell K, *et al*. How valid is a self reported 12 month sports injury history? *Br J Sports Med* 2003;**37**:545-547.
36. Green L, Kreuter M. *Health program planning: an educational and ecological approach*. 4th ed. New York: McGraw Hill, 2005.
37. Emery C. Considering cluster analysis in sports medicine and injury prevention research. *Clin J Sport Med* 2007;**17**:211-214.

The Corresponding Author has the right to grant on behalf of all authors and does grant on behalf of all authors, an exclusive licence (or non-exclusive for government employees) on a worldwide basis to the BMJ Publishing Group Ltd and its Licensees to permit this article to be published in British Journal of Sports Medicine editions and any other BMJ PGL products to exploit all subsidiary rights, as set out in our licence <http://bjsm.bmjournals.com/ifora/licence.pdf>

