Are squash players protecting their eyes?

R M Eime, C F Finch, C A Sherman, A P Garnham

METHODS

We administered a questionnaire to competitive and social/recreational adult squash players at three venues during a three week period in June 2000. Every adult player present during these randomly selected data collection sessions was invited to participate. This project was conducted in conjunction with the Victorian Squash Federation (VSF), the major body responsible for squash activities in Victoria, Australia. Deakin University Ethics Sub-Committee approved this study.

The questionnaire consisted of multiple choice questions with set options including an “other” option to allow for additional responses. For validity and comparison reasons, the content of the questionnaire was largely based on a previous survey in Melbourne. Analyses were performed using SPSS (Statistical Package for the Social Sciences). The response rate was calculated by subtracting the number of returned questionnaires from the total number of players approached. The proportion of players responding to each specific option of the categorical variables was determined and 95% confidence intervals (CI) were calculated. Age was grouped as 0-19 years (n=146) and ≥20 years (n=155). Experience was categorised as <20 (n=174) years and ≥20 years (n=124). The χ² test was used to determine associations between age, gender, experience, injury history, and use of eyewear. We also performed a logistic regression analysis to determine the relationship between these factors and eyewear behaviour.

Eye injury history was obtained from the question “Have you sustained an injury to the eye itself or its surrounding structures, including the eyelids, eyebrows and cheek or socket bones within the past 12 months whilst playing squash?” Use was determined by the question: “Do you wear protective eyewear when playing squash?”

Appropriate eyewear was defined as polycarbonate eyewear meeting the Squash Australia Standards. All other types of eyewear were defined as inappropriate.

Abbreviations: CI, confidence interval; OR, odds ratio; VSF, Victorian Squash Federation.
Table 1 Reasons for wearing protective eyewear among players reporting use (n=56)*

<table>
<thead>
<tr>
<th>Reasons for wearing</th>
<th>No</th>
<th>% Players wearing (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have knowledge of the risks of eye injury</td>
<td>19</td>
<td>33.9 (28.6 to 39.2)</td>
</tr>
<tr>
<td>I know someone else who has had an eye injury and I do not want to get one myself</td>
<td>15</td>
<td>26.8 (21.8 to 31.8)</td>
</tr>
<tr>
<td>I have had an eye injury before and do not want to get another one</td>
<td>13</td>
<td>23.2 (18.4 to 28.0)</td>
</tr>
<tr>
<td>It is compulsory for me to wear protective eyewear</td>
<td>12</td>
<td>21.4 (16.8 to 26.0)</td>
</tr>
<tr>
<td>Protective eyewear use has been recommended to me</td>
<td>10</td>
<td>17.9 (13.6 to 22.2)</td>
</tr>
<tr>
<td>I need to wear glasses for vision</td>
<td>6</td>
<td>10.7 (7.2 to 14.2)</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>9.0 (5.8 to 12.2)</td>
</tr>
</tbody>
</table>

* n = 1 missing value.

Table 2 Barriers to the use of protective eyewear among players reporting non-use (n=231)*

<table>
<thead>
<tr>
<th>Reasons for not using protective eyewear</th>
<th>No</th>
<th>% Players wearing protective eyewear (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do not want to</td>
<td>92</td>
<td>39.8 (34.1 to 45.5)</td>
</tr>
<tr>
<td>It restricts my vision while playing</td>
<td>79</td>
<td>34.2 (28.7 to 39.7)</td>
</tr>
<tr>
<td>It is too uncomfortable to wear</td>
<td>60</td>
<td>26.0 (20.9 to 31.1)</td>
</tr>
<tr>
<td>I have never thought about it</td>
<td>31</td>
<td>13.4 (9.5 to 17.3)</td>
</tr>
<tr>
<td>It is not necessary, as the risks of eye injury are not that great</td>
<td>27</td>
<td>11.7 (8.0 to 15.4)</td>
</tr>
<tr>
<td>I am not at risk of an eye injury because of my playing level</td>
<td>27</td>
<td>11.7 (8.0 to 15.4)</td>
</tr>
<tr>
<td>I do not like the look of protective eyewear</td>
<td>26</td>
<td>11.7 (8.0 to 15.4)</td>
</tr>
<tr>
<td>I am too lazy</td>
<td>26</td>
<td>11.7 (8.0 to 15.4)</td>
</tr>
<tr>
<td>I wear glasses while playing</td>
<td>13</td>
<td>5.6 (2.9 to 8.3)</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>11.7 (8.0 to 15.4)</td>
</tr>
</tbody>
</table>

* n = 15 missing values.

RESULTS

A total of 303 players participated, a response rate of 98.1%. Males comprised 66.1%, which is similar to the gender distribution of squash players in Australia. The mean age was 40.5 years, with a range of 18–68 years. Most (86.6%) played an average of <5 hours per week and 68.4% had played for at least 10 years, with 77.7% participating in organised competition. Only nine players (3.0%) reported that they had sustained an injury to the eye or its surrounding structures within the 12 months before the survey.

A total of 246 players (81.2%, 95% CI 76.8 to 85.6) reported wearing protective eyewear. The majority stated that they “always” wore their eyewear (68.5%, 95% CI 63.2 to 73.8) and 20.3% (95% CI 15.7 to 24.9) reported wearing protection “sometimes”.

A significantly higher proportion of players aged ≥40 years reported wearing protective eyewear than those <40 years (23.1% v 13.8%, χ² = 4.3, p<0.05). Those playing ≥20 years were more likely to report wearing protective eyewear than those playing shorter periods of time (25.8% v 14.4%, χ² = 6.1, p<0.01). There was a non-significant trend towards more females than males reporting protective eyewear use (24.5% v 15.6%, χ² = 3.6, p=0.06) and no significant relationship between the standard of player and eyewear use (16.0% v 27.0%, χ² = 2.6, p=0.11).

The logistic regression analysis identified two significant independent factors associated with eye protection—gender and playing experience. Males were less likely to report being protected than females (odds ratio (OR) 0.48, 95% CI 0.26 to 0.88) as were those with less than 20 years’ experience relative to those with longer experience (OR 0.45, 95% CI 0.25 to 0.84)

DISCUSSION

Before efforts to promote protective eyewear can be effectively developed it is important to determine players’ current behaviours and knowledge of suitable eyewear and injury risk. Use in this study was low, with few players reporting being informed about the risks of eye injury or which type of
Few players wear standards approved protective eyewear when playing squash. Eye injury experience is a major influence on protective eyewear use. Strategies to increase protective eyewear use need to incorporate education of players. Education strategies should focus on increasing players’ appreciation of injury risk in this sport. Players also need to be informed about what is appropriate eyewear.

A major reason given for protective eyewear use was experience of an injury, a major motivator for adopting any injury prevention measure. Most squash players have had no such injury. Thus education is needed to inform players of the risks and of the benefits of appropriate eyewear. Such a strategy might help change attitudes. Enforcing compulsory eyewear use for all players without prior education would not necessarily ensure high compliance rates.

IMPLICATIONS FOR PREVENTION

Player characteristics associated with knowledge and self-reported behaviours associated with the use of protective eyewear are essential for designing prevention strategies. The distinct needs of these groups must be met yet be flexible in their approach. Joint efforts, involving leading squash bodies, squash venue managers, eyewear manufacturers and distributors, and player associations are required. This could include an investigation of making appropriate eyewear available at all venues. Eyewear companies should assist with this goal. In addition to having eyewear available, information needs to be provided to all players about the risk of injury and about appropriate eyewear. Players should also be informed that protective eyewear can be worn with prescription glasses.

ACKNOWLEDGEMENTS

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