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Knowledge and attitude of physical education students, teachers, coaches, and players towards visual correction in sports

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Abstract

Background: Sports vision is a specialty of optometry that enhances athletic performance by assessing and improving visual skills. Understanding the visual requirements of various sports is critical to obtaining peak performance. The invention of contact lenses had a tremendous impact on sports vision since it provided players with a convenient and effective visual correction option. However, sports professionals' knowledge and attitudes toward vision corrective technologies remain limited.

Objective: The study assessed the knowledge and attitudes of physical education students, teachers, coaches, and athletes towards visual correction in sports.

Methods: A prospective, questionnaire-based study was carried out on 250 sports personnel who met the inclusion criteria. Each participant was questioned individually with a structured questionnaire, and their replies were recorded for analysis.

Results: Among the 250 participants, 185 (74%), including students/players and teachers/coaches, had limited expertise (0-15%) of visual correction. Teachers/coaches (41.27%), ophthalmologists (23.82%), and optometrists (19.14%) were the top three recommenders of vision correction. There was a strong correlation ($p < 0.001$) between the recommender and the technique of visual correction. Contact lenses were recommended less frequently than spectacles.

Conclusion: Sports professionals have a limited understanding of refractive defects and ways of vision correction. Teachers/coaches and students/players demonstrated equal degrees of awareness. Spectacles remained the most popular means of correction, while contact lenses were less usually advised for sporting activities.

Keywords: Knowledge, Attitude, Visual Correction, Sports Vision, Sports Personnel

Declaration: There is no conflict of interest, and research ethics are followed.

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Introduction: Refractive error is a global public health issue that affects athletes as much as the general population[1]. This means that those who participate in sports are not necessarily less likely to develop refractive errors or vision difficulties than others. In a 2009 study on refractive defects in South Indian adults, 1328 (36.5%) were classified as myopic, 661 (18.1%) as hyperopic, 1393 (38.2%) as astigmatic, and 496 (13.6%) as anisometropia[2]. The pattern of refractive errors in this rural South Indian population is analogous to results from other tropical places throughout the world[3]. In the United Kingdom, which has a population of over 60 million people, approximately 48 million are 16 or older. 59% reported participating in sports, games, or physical activities within the last four weeks, and 75% had engaged at least once in the previous year[4]. Sports vision is a subfield of optometry that studies athletes' visual and perceptual abilities. The process involves assessing and improving visual talents, prescribing visual aids (with or without protective functions), and optimizing the visual environment. As with nearly all other perceptual-motor skills, vision is critical to athletic performance. To increase athletic performance through improved vision, it is critical to understand the visual needs of various sports. However, it is also necessary to investigate how certain visual metrics can be further improved through vision training. Zeri F., Livi S., and Maffioletti S.'s study "Attitudes towards visual correction in sport: What coaches, physical education teachers, and sports physicians think" indicated that many sports professionals were reluctant to offer contact lenses owing to poor knowledge [7].

Although contact lenses have significant advantages over spectacles, it is remarkable that so few athletes have been encouraged to consider them for use in sports. This is possible even though most eye care practitioners ask about hobbies and sports during routine eye exams. The purpose of this research is to assess persons' knowledge and attitudes towards vision correction in sports so that the Eye Care Professionals can tackle the problems faced by sports personnel. The main Objective of the study was to assess the knowledge and attitudes of sports personnel toward visual correction and its impact on athletic performance.

Research Question: What are the knowledge and attitudes of sports personnel toward visual correction, and how do these factors influence their performance in sports?

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Methodology

Study Design and Duration: A cross-sectional, prospective study was conducted over a period of six months.

Study Setting and Population: The study was carried out among physical education students, teachers, coaches, and players in and around Pune, India. Participants were selected based on predefined inclusion and exclusion criteria.

Ethical Considerations: The study protocol received ethical approval from the Ethics Committee of Bharati Vidyapeeth University Medical College.

Inclusion and Exclusion Criteria

Inclusion criteria: It included physical education students, teachers, coaches, and players with undiluted pupils and no history of ocular diseases, surgeries, or trauma.
Exclusion criteria: They comprised individuals with any ocular disease, previous ocular surgery or trauma, dilated pupils at the time of assessment, and those unwilling to participate.

Data Collection Instrument: Data were collected using a structured, self-administered questionnaire developed to assess knowledge, attitude, and awareness regarding visual correction in sports. The questionnaire was designed to evaluate three domains:

1. Importance of visual correction in sports (knowledge and attitude).
2. Recommendation and awareness of contact lens use in sports activities.
3. Concern for eye health and frequency of eye check-ups.

The questionnaire contained 18 items, of which 12 were mandatory for all participants (students and players), 8 were specific to teachers and coaches, and 3 optional questions were included for those who used spectacles or contact lenses.

Data Collection Procedure: Participants were approached individually and instructed on the study's purpose. Each respondent completed the questionnaire under supervision to ensure clarity and completeness. Responses were recorded systematically. Following the interview, all participants received a brief educational session emphasizing the importance of visual correction and contact lens use for enhanced sports performance and eye safety.

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Statistical Analysis: Collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 19.0. Descriptive statistics were applied to summarize participant responses. Fisher's exact test was used to assess associations between awareness and various demographic or professional parameters.

Results

A total of 250 sports personnel participated in the study, with all questionnaires completed. The mean age of participants was 23.48 ± 5.47 years. In terms of professional distribution, 10 (4%) were coaches, 85 (34%) were players, 145 (58%) were physical education students, and 10 (4%) were physical education teachers. Overall, 38 participants (15.2%) reported having a visual problem, and 10 (4%) were contact lens users, representing approximately one in four of those with a visual defect. Participants were involved in 14 different sports disciplines, with Basketball (52.8%), Football (16%), and Volleyball (11.2%) being the most frequently represented.

1. Age and Gender Distribution

The majority of respondents were between 21 and 25 years (58%), followed by ≤20 years (23.2%). as in Figure 1, and Males dominated (95 %) as in Figure 2

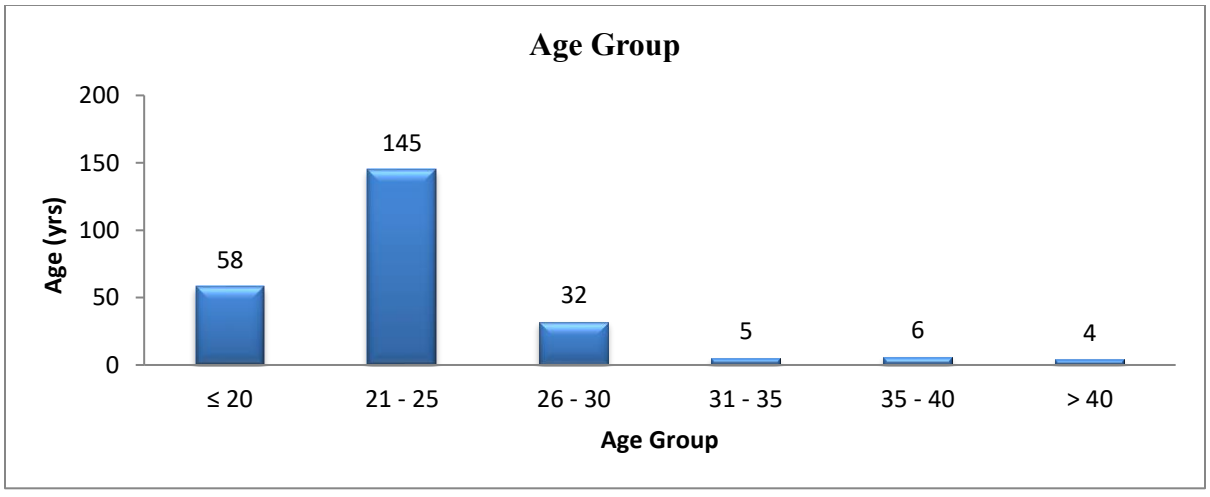

Figure 1: gender distribution

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The gender of the respondents found 5 percent female and 95 % male. Females population is less represented.

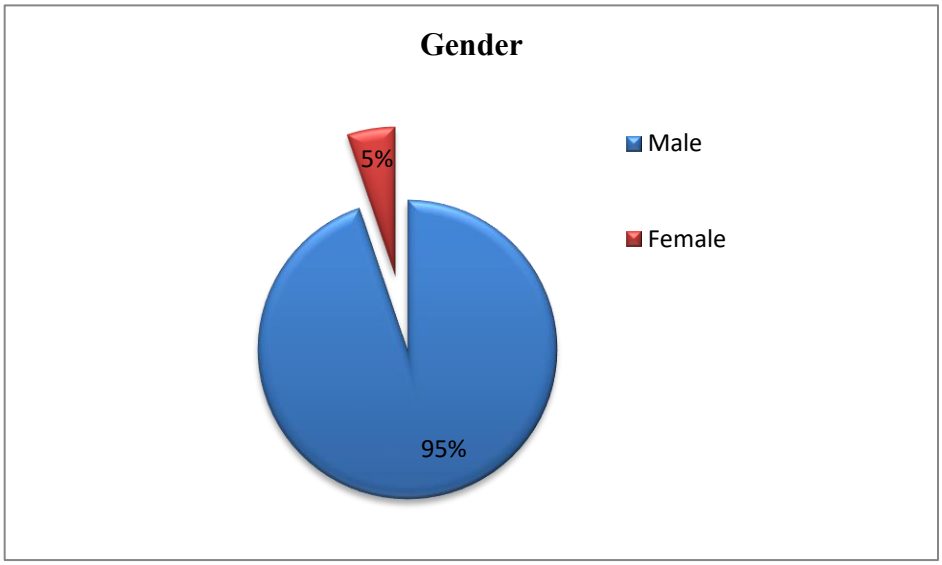

Figure 2 Gender wise distribution

3. Occupation-wise Distribution

As shown in Figure 3, the majority of respondents were students (58%), followed by players (34%), while coaches and teachers each constituted 4% of the study group. This reflects a higher participation rate among students in sporting activities.

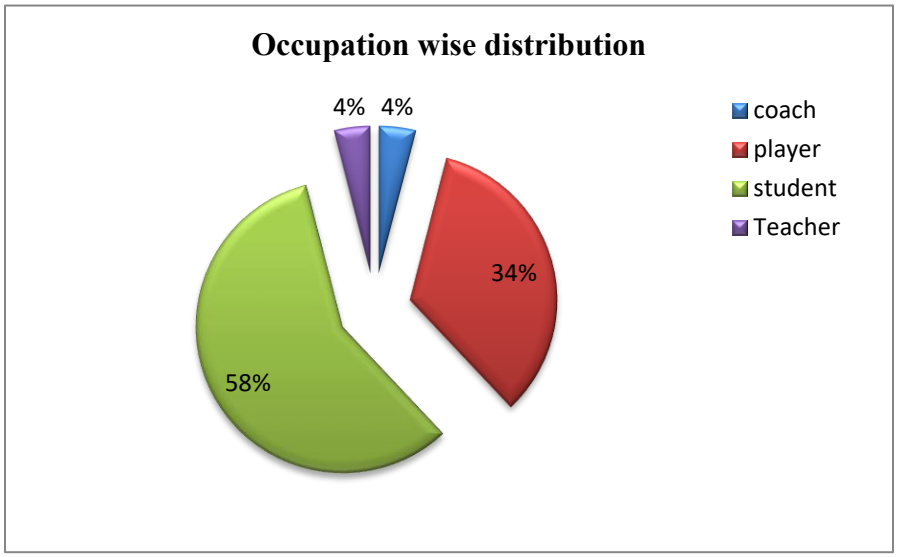

Figure 3 Occupation wise distributions

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4. Mode of Visual Correction Recommended

As shown in table 1, 58% of the respondents reported that no visual correction was advised for them. Among those who were recommended correction (42%), spectacles (29.2%) were the most common mode, followed by contact lenses (11.2%), implantable contact lenses (1.2%), and LASIK (0.4%). This suggests that spectacles remain the preferred and accessible correction method among sports personnel.

Table 1: Number of cases

Mode of correction	Number of cases	Percentage (%)
Contact lens	28	11.2
Spectacle	73	29.2
LASIK	1	.4
Implantable contact lens	3	1.2
No correction	145	58.0
Total	250	100.0

5. Sports Participation

Among all respondents, Basketball (52.8%) was the most popular, followed by Football (16%) and Volleyball (11.2%).

Table 2 Sports wise distribution of sports personals.

Sports	Frequency	Percent
Athletic	9	3.6
Badminton	9	3.6
Basket ball	132	52.8
Cricket	18	7.2
Cycling	1	0.4
Football	40	16.0
Gymnastics	2	0.8
Handball	1	0.4
Hockey	1	0.4
Kabaddi	3	1.2

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Kho-Kho	3	1.2
Shooting	1	0.4
Swimming	2	0.8
Volleyball	28	11.2
Total	250	100.0

6. Spectacle Wear during Sports

Figure 4, it was found that only 11.2% of respondents wore spectacles during sports activities, while 88.8% did not.

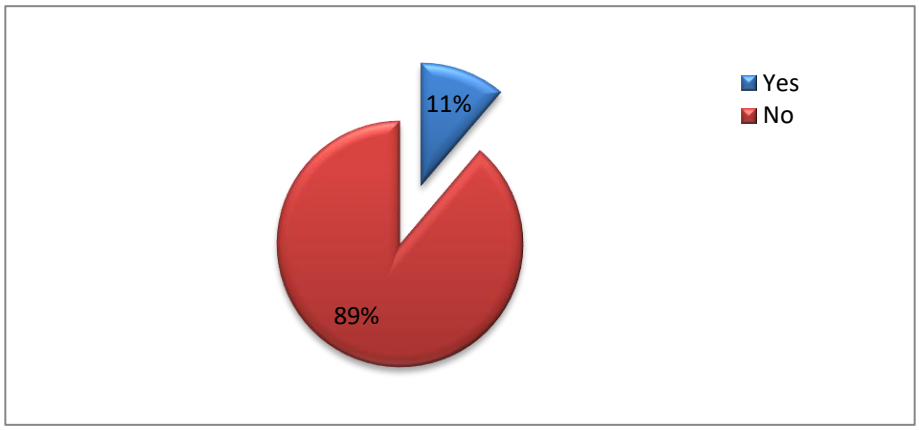

Figure 4: Spectacle wearers while playing sport

7. Knowledge Level on Refractive Error

The majority of respondents (74%) demonstrated low knowledge (0–15%) about refractive errors and their correction methods, as presented in Table 11 and Figure 11. Only 1.2% had a higher understanding (75–90%).

Table 3: Knowledge Level on Refractive Error

Knowledge score (%)	Frequency	Percentage (%)
0 -15	185	74.0
15 - 30	36	14.4
30 -45	10	4.0
45 - 60	5	2.0
60 -75	11	4.4

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75 -90	3	1.2
Total	250	100.0

8. Association between Recommenders and Mode of Correction

A significant association ($p < 0.05$) was found between the recommender and the mode of correction. Most participants were advised by teachers/coaches (n = 97), among whom 77 recommended no correction, indicating poor awareness among non-eye care professionals.

Table 4: Association between recommenders and mode of correction.

Recommender					Total	p-value
	Contact lens	Spectacle	Implantable contact lens	No correction		
Optician	6	3	0	4	13	Fisher's Exact Test: $p < 0.05$
Optometrist	9	23	0	13	45	
Ophthalmologist	2	31	2	21	56	
Others (Medical doctor)	4	2	0	18	24	
Teacher/Coach	6	13	1	77	97	
Total	27	72	3	133	235	

9. Reason for not wear spectacle

Table 5 shows that most of the people (143) said that wearing spectacles might injure their eyes while playing, followed by 53 people who said that spectacles are not mandatory.

Table 5: Reason for wearing spectacles

Reasons	Number of cases	Percentage (%)
It is not mandatory	53	21.2
Coaches do not allow to wear during sports	25	10.0
Expensive	2	0.8

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Power will increase	8	3.2
It might injure my eyes	143	57.2
Others	19	7.6
Total	250	100.0

10. Contact lens wear while playing sports

Figure 5 shows that only 10 people wear contact lenses. That is out of 38 (15.2%) total refractive errors, only 4% wear contact lenses

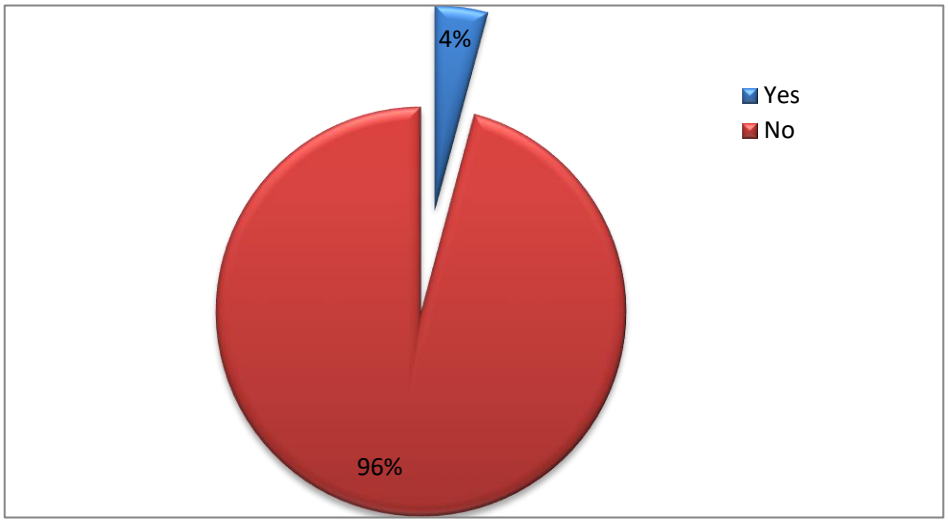

Figure 5: Contact lens wear versus no wear

11. Reasons for eye check-up

Table 6: Reasons for eye check-up

Reasons	Number of cases	Percentage (%)
Increase my performance in sports	19	7.6
My eyesight problem	48	19.2
Regular eye check-up	25	10.0
Taking a spectacle or contact lens	3	1.2
Not done at all	147	58.8
Others	8	3.2
Total	250	100.0

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12. Association between wearing spectacles during sports versus not wearing and affects in their performance

Table 7: Level of performance

Spectacle wearers	Level of performance					Total	p-value
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree		
Yes	7	13	7	0	0	27	0.204
No	2	6	4	2	1	15	
Total	9	19	11	2	1	42	

By using Fisher's exact test, p-value > 0.05; therefore, there is no significant association between Q3 and Q6. Which means that out of 27 spectacle wearers, 20 answered that they agree that spectacle choice affects their performance during sports, and even out of 15 non-spectacle wearers, 8 agree the same.

13. Mode of correction comfortable for sports

Table 8: Teacher/students

Mode of correction	Teacher/Student		Total	p-value
	Teacher	Student		
Contact lens	8	43	51	0.032
Spectacle	2	12	14	
LASIK	2	9	11	
Implantable contact lens	0	12	12	
Don't know	8	154	162	
Total	20	230	250	

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By using Fisher's exact test, p-value < 0.05; therefore, there is a significant association between the mode of correction with teachers/coaches and students/players. Which means that out of 20 teachers/coaches, 8 of them thought that contact lens mode of correction is suitable /comfortable for sports, whereas out of 230 students/players, 154 of them didn't know about the mode of correction that was suitable /comfortable for sports.

Discussion

Knowledge of Refractive Error among Sports Personnel: A total of 250 sports personnel participated in the present study, comprising 20 (8%) teachers/coaches and 230 (92%) students/players. A structured questionnaire was administered to assess their knowledge regarding refractive error correction. The results revealed that most participants, including both teachers and students, had a knowledge level ranging between 0–15%, which was statistically not significant ($p > 0.05$). This indicates that the majority lacked awareness about refractive errors, their effects on vision, and their influence on sports performance. Among all respondents, 178 (71.2%) expressed concern about their eyesight; however, 155 (62%) had never undergone an eye examination. This highlights the existence of poor awareness of eye health and preventive care. No statistically significant difference ($p = 0.705$) was observed between teachers/coaches and students/players, suggesting similar levels of limited understanding in both groups. Hence, optometrists must take an active role in educating sports personnel about the importance of eye care, sports vision, and visual training for enhanced athletic performance.

Attitude towards Refractive Error Correction: Regarding attitudes towards visual correction, 111 (44.4%) participants agreed that refractive correction helps them see better, and 62 (24.8%) believed that uncorrected refractive errors worsen over time. The correlation between teachers/coaches and students/players was statistically insignificant ($p > 0.05$), indicating similar perceptions among both groups. Teachers/coaches were identified as the most frequent recommenders of correction methods (97; 41.27%), followed by ophthalmologists (56; 23.82%) and optometrists (45; 19.14%). Among students/players, 77 (32.76%) reported that their teachers/coaches recommended no correction, and only 6 (2.55%) mentioned contact lenses as a recommended option. The association between recommenders and correction type was statistically significant ($p < 0.001$), and comparison between teachers/coaches and students/players also showed a significant difference ($p < 0.003$).

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These findings suggest that contact lenses are under-recommended compared to spectacles. This could be attributed to persistent misconceptions and a lack of awareness about contact lenses among teachers and coaches. Similar findings were reported by Zeri et al., who observed a low tendency to recommend contact lenses due to limited knowledge and awareness among sports professionals.

Spectacle Use and Perceived Impact on Sports Performance: An interesting observation was that 29 (66%) participants believed spectacle choice affects sports performance; however, this association was not statistically significant ($p > 0.737$). A majority (143; 57.1%) thought spectacles might cause injury during sports, while 53 (21.2%) believed spectacles were unnecessary during play. Many wore spectacles only because of high refractive error and were unaware of contact lenses as an alternative. Among respondents, 38 (15.2%) had refractive errors, and 28 (11.2%) reported using spectacles; however, most avoided wearing them during sports due to fear of injury (143; 57.2%) or the belief that spectacles were not essential (53; 21.2%). The association between wearing and not wearing spectacles was not statistically significant ($p > 0.066$).

Contact Lens Awareness and Acceptance: Although most participants agreed that visual correction is important for better performance, their willingness to use or recommend contact lenses was low. Among them, 11 contact lens wearers and 17 teachers/coaches agreed that contact lenses provide better clarity during sports. However, no significant association ($p = 0.318$) was found between this perception and participant category, indicating low knowledge levels regarding contact lens advantages. Furthermore, 137 (55%) believed that contact lenses could scratch or damage eyes, and 32 (12%) thought long-term use was unsafe. Such misconceptions indicate a strong need for awareness campaigns about contact lens safety and benefits in sports vision. Supporting this, Schnell and Khaireddin emphasized that an intelligent choice of contact lenses can improve athletic performance and provide subtle visual advantages.

Mode of Correction Suitable for Sports Activities: A majority of participants (162; 64.8%) were unaware of the most suitable mode of visual correction for sports activities. A statistically significant association was found between perceived suitability of correction and participant category, suggesting that appropriate counseling and education could increase acceptance of contact lenses among sports personnel. Overall, the findings of this study highlight a lack of knowledge and awareness regarding refractive error correction and contact lens use in sports.

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Conclusion

The present study revealed that the level of knowledge regarding refractive errors and their modes of correction among sports personnel (teachers/coaches and students/players) was very low (0-15%). No significant difference was observed between teachers and students in terms of awareness. A strong association was observed between the recommenders and the preferred modes of correction among sports personnel. Spectacles were more commonly preferred than contact lenses.

References

1. Beckerman SA, Hitzeman S. The ocular and visual characteristics of an athletic population. Optometry. 2001;72(8):498–509.
2. Sannapaneni K, Marmamula S, et al. Prevalence and risk factors for refractive errors in the South Indian adult population: The Andhra Pradesh Eye Disease Study. Clin Ophthalmol. 2009;3:17–27.
3. Raju P, Ramesh SV, et al. Prevalence of refractive errors in a rural South Indian population. Invest Ophthalmol Vis Sci. 2004;45(12):4268–72.
4. General Household Survey 2002. Sport and leisure: participation in sports, games and physical activities. London: HMSO; 2004.
5. Sport Participation 2010 Research Paper. Her Majesty the Queen in Right of Canada; 2012. Catalogue No. CH24-1/2012E-PDF. ISBN: 978-1-100-21561-7.
6. Obstfeld H. An introduction to sports vision. MPhil, FCOptom, FBOA, DCLP; 2003.
7. Zeri F, et al. Attitudes towards visual correction in sport: What coaches, physical education teachers and sports physicians think? Cont Lens Anterior Eye. 2011;34(2):71–6. doi:10.1016/j.clae.2010.08.006.
8. Schnell D, Khaireddin R. Corneal metabolism with contact lenses in competitive sports. Ophthalmologe. 2013;110(6):502–10.
9. Komori Y, Kobayashi D, Murase Y, et al. The use of contact lenses during water-polo play: a 20-year study of Japanese college players. J Sports Sci. 2013;31(6):607–11. Epub 2012 Nov 9.

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