Contact Lens and Anterior Eye xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Contact Lens and Anterior Eye

journal homepage: www.elsevier.com/locate/clae

Short communication

Trends of contact lens prescribing in Jordan

Mera F. Haddad[a,*], May Bakkar[a], Yazan Gammoh[b], Philip Morgan[c]

[a] Faculty of Applied Medical Sciences, Department of Allied Medical Sciences, Jordan University of Science and Technology, Irbid 22110, Jordan
[b] Faculty of Pharmacy, Department of Optometry, Amman Al Ahliya University, Amman, Jordan
[c] Eurolens Research, The University of Manchester, Manchester, United Kingdom

ARTICLE INFO

Article history:
Received 18 January 2016
Received in revised form 6 June 2016
Accepted 10 June 2016

Keywords:
Jordan
Contact lens
Prescribing trends
Survey
Soft lens
Rigid lens

ABSTRACT

Purpose: To evaluate contact lens prescribing trends among optometrists in Jordan.
Methods: Optometrists from 173 practices in Jordan were surveyed about prescribing contact lenses in their practice. Practitioners were required to record information for the last 10 patients that visited their practice. Demographic data such as age and gender was obtained for each patient. In addition, data relating to lens type, lens design, replacement methods and the care regime advised to each patient were recorded. Practitioners were required to provide information relating to their education and years of experience. The influence of education and experience with respect to lens prescribing trends was explored using linear regression models for the proportions of lens types fitted for patients.
Results: A total of 1730 contact lens fits were analyzed. The mean (±SD) age of lens wearers was 26.6 (±7.9) years, of whom 65% were female. Conventional hydrogel lenses were the most prescribed lenses, accounting for 60.3% of the fits, followed by silicone hydrogel lenses (31.3%), and rigid lenses (8.4%). In terms of lens design, spherical lenses appeared to be most commonly prescribed on monthly basis. Daily disposable lenses were second most prescribed lens modality, accounting for 20.4% of the study sample. Multi-purpose solution (MPS) was the preferred care regimen, with a prevalence of 88.1% reported in the study sample, compared to hydrogen peroxide (1-step and 2-step), which represented only 2.8% of the patients in this study. A relationship was established between the two educational groups for rigid lens prescribing ($F = 17.4$, $p < 0.0001$), while the experience of the optometrist was not a significant factor ($F = 0.4$, $p = 0.54$).
Conclusion: This work has provides an up-to-date analysis of contact lens prescribing trends among optometrists in Jordan. Contact lens prescribing in terms of lens type, lens design, modality of wear and care regimen agree with global market trends with small variations. This report will help practitioners and the industry to detect any deficiencies in the contact lens market in Jordan, which will ease implementing current and future plans in developing contact lens practice and patient eye care in the region.

1. Introduction

Contact lenses are a popular and effective mode of vision correction; according to industry estimates, there are around 140 million people globally wearing contact lenses [1]. Most contact lens patients are prescribed soft lenses (vs. rigid lenses), with spherical lens designs the most commonly fitted, followed by toric lenses [2,3]. The past decade has seen a number of advancements in lens materials, designs and modalities which might be expected to alter the prescribing patterns of contact lenses over time.

For the last 20 years, an ongoing evaluation of contact lens prescribing trends around the world has been conducted by several groups of researchers and eye care practitioners [1–5]. The Jordanian contact lens market was included in the 2008 iteration of this international survey [6]. This work showed a trend towards prescribing soft contact lenses for daily wear, and an increase in fitting silicone hydrogel lenses for daily wear. As reported globally, the majority of wearers were females. Rigid lens fitting was shown to represent only a small portion of the market in Jordan. Despite the valuable information reported by the international annual contact lens prescribing trend surveys, there is still limited information on contact lens prescribing trends in the Middle East in general and in Jordan in particular. Therefore, in this current work, we sought to assess current contact lens prescribing trends in Jordan. The data will assist in further understanding of the local

* Corresponding author.
E-mail addresses: mfhaddad@just.edu.jo, haddadmera0@gmail.com (M.F. Haddad).

http://dx.doi.org/10.1016/j.clae.2016.06.004
1367-0484/

contact lens market and to compare it with other developed markets. Factors that are likely to influence contact lens prescribing trends in Jordan will also be investigated

2. Materials and methods

Contact lens practitioners from 173 practices in Jordan were surveyed about prescribing or selling contact lenses in their practice. The contact lens prescribing trends were evaluated by adopting a similar methodology used by the international annual contact lens prescribing survey [3]. The practitioners were asked to record information about the last 10 patients fitted with contact lenses in their practice. The information was not necessarily about actual fitting of patients, rather the sale of lenses to the last 10 patients entering their practice. This is because many optometrists in Jordan are not licensed to fit contact lenses. In addition, contact lens fitting in Jordan is not solely performed by the optometrist as ophthalmologists are also involved in examining patients for contact lens wear and prescribing contact lenses.

Demographic data such as age and gender were obtained for each patient that visited the practice. In addition, data about the contact lens type, lens design, replacement method and care regime advised for each patient were recorded. Details of the options for each category of lens prescribing are shown in Table 1.

The questionnaire also included questions about the optometrist who completed the form: including their education level, whether they were a college or university graduate, and the number of years they have been working as optometrists. The effect of education and experience on the trends of lens prescribing was explored using linear regression models for the proportions of lens types fitted for patients.

3. Results

The questionnaire was completed by 173 optometrists working either in optical shops or hospitals in different cities in Jordan, mainly in the north and middle of Jordan. All optometrists kept records for the patients attended their practices or clinics and the information was obtained for the last 10 patients visited their practices, with a total of 1730 patients were included in the survey.

3.1. Demographic data

The total number of patients who purchased or fitted with contact lenses was 1133 females (65%) and 597 males (35%). The mean age ± standard deviation for females was 26.1 ± 7.8 years and for males was 27.5 ± 8.2 years.

Table 1
Categorization of main factors and options for each category.

Category	Option
Lens type	Conventional hydrogel Soft silicone hydrogel Rigid
Lens design	Spherical Toric Multifocal Cosmetic tint Orthokeratology Other
Replacement	Daily 2 weekly 1 month 3–6 month 12 months
Care regime	MPS Hydrogen peroxide

3.2. Contact lens data

Fig. 1 shows the percentage of patients wearing different types of contact lenses. Conventional hydrogel lenses are the most commonly prescribed lenses, accounting for 60.3% of the patients. This is followed by silicone hydrogel lenses, which accounts for 31.3% of the patients, and the least prescribed type is rigid contact lenses (8.4% of the study sample).

In terms of lens design, spherical lenses are the widely prescribed followed by cosmetic tint and toric contact lenses. Fig. 2 represents the number of patients (males compared to females) prescribed with different lens designs.

Studying the combination of lens designs and lens type showed that spherical hydrogel lenses were prescribed the most commonly (31%) in terms of lens fits. Cosmetic tint-hydrogel lenses accounted for 26.4%, and hydrogel toric lenses were prescribed to 7.6% of the study sample. Soft silicone hydrogel also appeared to be prescribed the most for spherical lens designs (18.6%) followed by 5.2% for toric lens design.

Monthly daily wear lenses appear to dominate the contact lens market (Fig. 3). The figure shows that it is the most prescribed modality among other replacement methods and accounts for 50.9% of the lens fits. Daily disposable lens modality is ranked second most prescribed lens modality accounting for 20.4% of the study sample. This is followed by 3–6 months lens modality (12.5%) and 12 months replacement modality accounting for 10.9% of the study population.

3.3. Lens care regimen data

The proportion of different lens care regimens prescribed to the patients is shown in Fig. 4. Multi-purpose solution (MPS) is most commonly prescribed with lenses in Jordan and accounts for 88.1% of the study. Hydrogen peroxide (1-step and 2-step), on the other hand, was only prescribed for a tiny portion of the sample in this study (2.8% for the two types). No solution was prescribed for 9.1% of the survey, accounting for the small percentage of daily disposable wearers shown in Fig. 3.

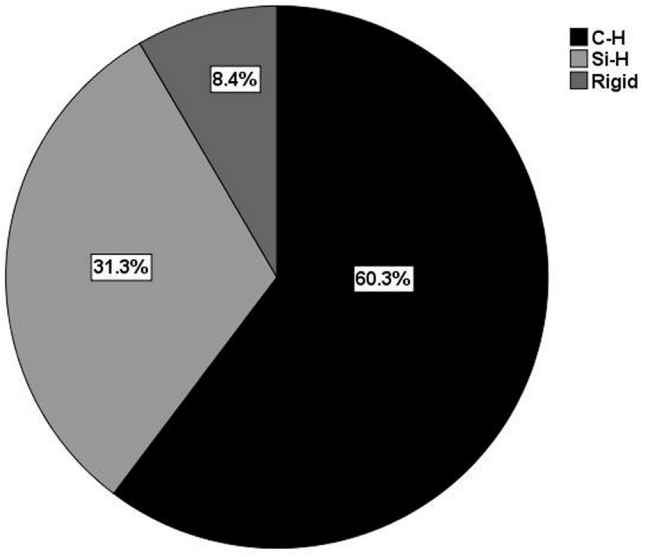

Fig. 1. Proportions of contact lens type prescribed for the patients. C—H: Conventional hydrogel, Si—H: silicone hydrogel.

Please cite this article in press as: M.F. Haddad, et al., Trends of contact lens prescribing in Jordan, Contact Lens & Anterior Eye (2016), http://dx.doi.org/10.1016/j.clae.2016.06.004