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Kertas Asli/*Original Article*

A Survey of Optometric Contact Lens Prescribing in Malaysia

(Survei Mengenai Preskripsi Kanta Sentuh Optometri di Malaysia)

NORHANI MOHIDIN & TEE LEE FUNG

ABSTRACT

This survey represents an initial examination of contact lens practice in Malaysia. It is based on a questionnaire that was sent to selected members of the Association of the Malaysian Optometrists to survey the prescribing habits of g contact lenses and care products. Questions included types of lenses prescribed, care systems frequently recommended and types of complications seen. Optometrists in Malaysia prescribed an average of 90 new pairs of contact lenses per year. Soft lenses made up 84% of the prescription followed by 14% of rigid gas permeable lenses and 1.5% of polymethymethacrylate lenses. Disposable/frequent replacement lenses accounted for 60% of the soft lenses prescribed. The most commonly prescribed disinfecting system was chemical disinfection. The most common complication seen during aftercare consultation was dry eye-related problems.

Key words: Contact Lens Practice, Survey, Optometrists

ABSTRAK

Kajian ini merupakan kajian awal dalam amalan kanta sentuh di Malaysia. Ia berdasarkan satu kajian soal selidik yang dihantar kepada ahli yang terpilih dari Persatuan Optometris Malaysia untuk mengenal pasti amalan mereka dalam mempreskripsi kanta sentuh dan sistem penjagaannya. Soalan soal selidik merangkumi jenis kanta yang disarankan, penjagaannya dan jenis komplikasi yang biasa ditemui. Optometris di Malaysia mempreskripsi sebanyak 90 pasang kanta sentuh setiap tahun. Kanta sentuh lembut terdiri daripada 84% kanta sentuh yang dipreskripsi diikuti oleh 14% kanta separa keras dan 1.5% kanta polimetilmetakrilat. Kanta pakai buang merupakan 60% daripada kanta yang dipreskripsi. Sistem penjagaan yang biasa disarankan ialah sistem kimia. Komplikasi yang biasa ditemui semasa rawatan susulan ialah mata kering.

Kata kunci: Amalan Kanta Sentuh, Soal Selidik, Optometris

INTRODUCTION

The practice of optometry was legalized in Malaysia in 1991. This means that all practitioners involved in vision care particularly optometry and opticianry need to be registered with the Malaysian Optical Council (MOC) to practice legally. In general, with the introduction of the Optical Act (1991) all contact lens practitioners are required to have degree qualifications in optometry. However there are some practitioners who are allowed to practice contact lenses by virtue of a grandfather clause that allows practitioners who have more than three years experience in contact lens prior to the implementation of the Act in to carry on practicing. Opticians may have the experience but not the paper qualification and recognized competence to practice contact lens fitting and care. At present, optometrists in Malaysia are comprised of graduates of the Universiti Kebangsaan Malaysia or overseas universities. Not all of them are members of the Association of the Malaysian Optometrists (AMO).

Contact lenses offer one form of vision correction for myopia. Previous studies amongst school children aged 7-18 years in Malaysia show a relatively high prevalence of myopia (Garner et al. 1987; Mohidin et al. 1990; Saadah et al. 2002). The majority of them are in the age groups that would probably consider contact lenses as a form of vision correction for the advantages it offers such as minimal effects of lens magnification, convenience in sports and for cosmetic reasons. It is estimated that 6-7% of the Malaysian population wear contact lenses. However, little is known about the practitioners who are involved in prescribing contact lenses in Malaysia with regard to their prescribing habits, preferences and problems seen amongst contact lens wearers. Various studies carried out elsewhere on the state of contact lens practice have been reported (Holden et al. 1989; Cho et al. 1994; Pearson 1991; Sweeney et al. 1991; Fonn et al. 1990; Yung et al. 2005; Morgan & Efron 2006; Woods et al. 2007). The aim of this study was to determine the Malaysian optometric trends of prescribing contact lenses and care regimen.

MATERIALS AND METHOD

A questionnaire, (Appendix 1) similar to the one used by Cho et al. (1994) with slight modifications was sent to members of the AMO who are in private practice in West Malaysia with a covering letter explaining the purpose of the survey. To avoid duplication of responses only one survey per practice was to be completed. AMO members who work at universities or hospitals were excluded from the survey.

Practitioners were requested to complete the questionnaire for the year preceding the survey date and return their completed survey within a month of receiving them, in the year 1999. Yung et al. (2005) reported that there was no

major changes in the prescribing habits of practitioners in Hong Kong compared to previous survey carried out within the last decade.

RESULTS

RESPONSE RATE AND LOCATION OF PRACTICE

Out of the 131 questionnaires sent out, there were 66 replies. This represents a response rate of 50.4%. The locations of practitioners who responded to the survey are shown in Figure 1. About 65.7% of those who responded had their practice on the ground floor of a shoplot.

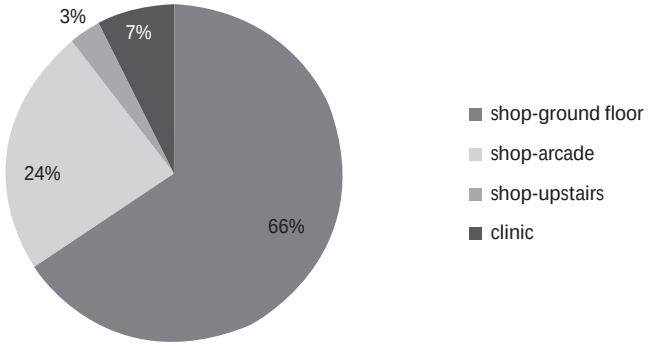

FIGURE 1. Percentage of each type of practice represented in the survey

CONTACT LENS WEARERS

Sixty percent (60%) of the optometrists surveyed examined and fitted 5-10 new contact lens patients per month. This represents an average of about 90 new patients per year. Twenty-two percent (22%) of the optometrists fitted more than 10 new patients per month and 18% saw less than 5 new patients per month.

As expected the majority (79%) of contact lens wearers were females. Sixty-seven percent (67%) of them were above 21 years old. The main reasons given for contact lens wear were cosmetic (70.1%), better vision (11.9%) and convenience (10.4%). Similar finding were found by Tajunisah et al. (2008) in a survey of university students in a campus situated in Kuala Lumpur. The majority (92.5%) of patients seen by the optometrists in this survey had refractive powers up to minus 6.00D. Six percent (6%) of the contact lens patients had refractive power between -6.25 to -9.00D.

LENS TYPE

The most common category of lenses prescribed was soft lenses (83%). 14.9% of the practitioners surveyed also prescribed rigid gas permeable lenses. This survey showed that the Boston GP materials were the most popular rigid lenses prescribed (Figure 2). A minority (2%) of practitioners still chose polymethylmethacrylate (PMMA) as their most frequently used lens material.

The majority (91%) of the practitioners recommended moderate water content (38% to 58%) lenses for their patients while 7.5% of the practitioners chose low water (< 38%) content lenses.

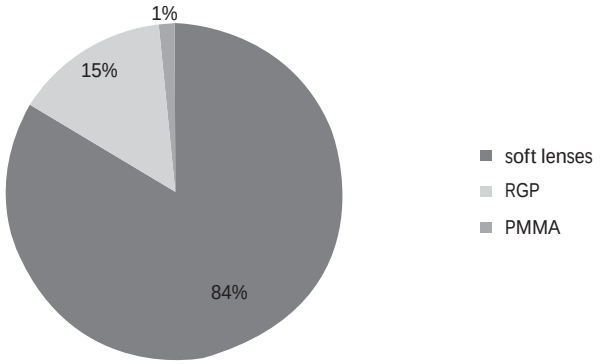

FIGURE 2. Percentage of category of lenses prescribed

MODE OF WEAR

The most commonly prescribed mode of wear was disposable or frequent replacements (60%). Thirty seven percent (37%) of practitioners recommended daily wear most of the time and a small number (3%) recommended the use of contact lens on extended wear basis. Among the extended wear lens wearers, the majority (97%) of practitioners recommended taking the lens out after 1-2 days while 3% of the practitioners recommended taking the lens out after 3-5 days. None of the practitioners surveyed recommended wearing contact lenses on true extended wear basis i.e. for a week or more. Manufacturer's proprietary designs accounted for almost all the contact lenses prescribed (Figure 3).

CARE AND MAINTENANCE

In relation to cleaning of lenses by patients, digital rubbing with a surfactant cleaner and rinsing with saline was recommended by 61% of practitioners. Twenty-five percent (25%) of the practitioners advocated cleaning and rinsing with multipurpose solutions (Figure 4). Chemical disinfection was the most

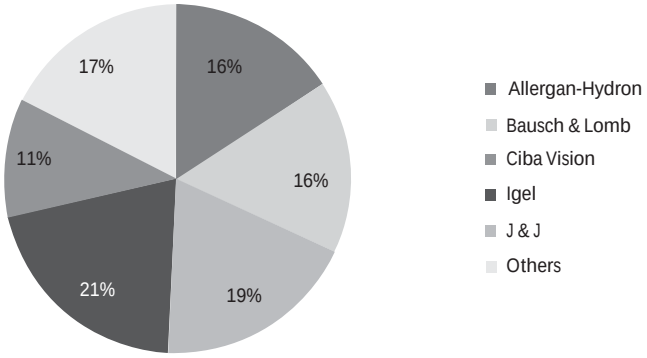

FIGURE 3. Percentage of commonly prescribed brand of contact lenses by practitioners

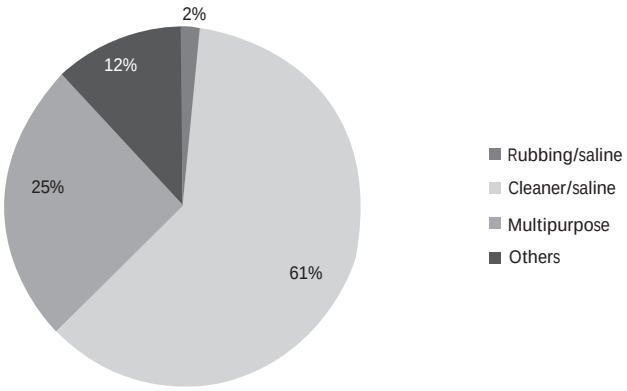

FIGURE 4. Methods of cleaning of soft lenses recommended by practitioners

popular form of disinfection recommended by practitioners (61%) in Malaysia. The second most popular system was a peroxide based system (33%). Ninety-one percent (91%) of practitioners recommended weekly use of enzyme cleaner to their contact lens patients. 7.5% of practitioners recommended fortnightly use of enzymatic cleaner and 1.5% would not recommend use of enzymes on regular basis.

AFTERCARE

About 58% of the practitioners reported that more than 50% of their patients return for an aftercare visit. For 37% of the practitioners, 10-50% of their patients came back for an aftercare visit. A small group of practitioners said that less than 10% of their patients came back for an aftercare consultation. The main problem seen by 66.7% of practitioners during an aftercare visit was dry eye-

related problems. Besides this, papillary conjunctivitis and red eye were the second most common problems seen (Figure 5). The drop out rate for contact lens patients is less than 10% for the majority of the practitioners.

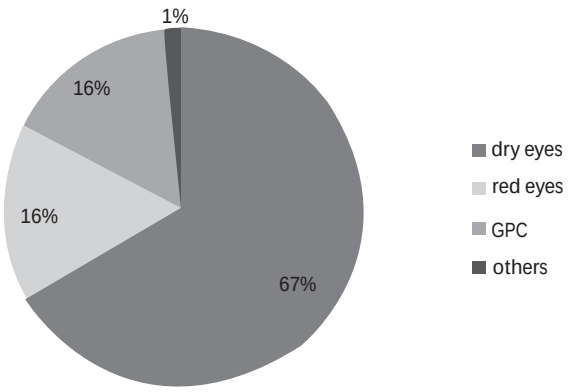

FIGURE 5. Common types of complications seen

CONSULTATION FEES

Fifty-four percent (54 %) of practitioners charged consultation fees for contact lens fitting. The others lump their fees together with the cost of the lenses.

DISCUSSION

The response rate of 50.4% of this survey compares well with similar survey carried out by Conway and Cho (1990) and Pearson (1991) that target a similar group of practitioners. Most of the respondents were qualified optometrists who were either trained abroad or trained at the optometry school in UKM. They were likely to be interested in the results of such survey. In contrast other researchers have found a response rate of 19% (Holden et al. 1989), 10% (Fonn et al. 1990), 25% (Cho et al. 1994), 22% (Yung et al. 2005), 9% (Morgan & Efron 2006) and 14% (Woods et al. 2007). Our study showed a seemingly higher rate of response probably because it was the first survey ever conducted amongst optometrists in Malaysia.

Most of the practitioners surveyed had their premises located on the ground floor of a shoplot. In Malaysia, these types of premises are cheaper than those located at shopping complexes or malls. However the highly commercial optical shops located at city malls or shopping complexes open long hours, seven days a week and they remain the major providers of the optical services in this

country. Similar situations were reported by Cho et al. (1994) and Cheung et al. (2002) in Hong Kong.

Practitioners in Malaysia saw an average of 90 new patients per year. This is comparable to the number of new patients seen by practitioners in Australia (n = 95) and but much less than the number seen by practitioners in other countries such as Canada (n = 160), Hong Kong (n = 540) and United Kingdom (n = 247), (Cho et al. 1994). It is possible that insufficient publicity on the use of contact lenses for correcting vision, incomparable social economic status and unawareness by the public contribute to this seemingly low number of contact lens patients seen by practitioners in this country. Considering that the prevalence of visual disorders in Malaysia where the prevalence of myopia amongst the Chinese is nearly comparable to that of Hong Kong, there is certainly a bigger market for prospective contact lens users in Malaysia. Overall, about 79% of new contact lens wearers were females. This finding is consistent with results from other countries around the world, with values ranging from 56% to 83% (Morgan et al. 2008).

About 83% of contact lens patients were fitted or supplied with soft lenses. The practitioners targeted in this survey were degree qualified optometrists so they would have the skill and knowledge to prescribe rigid gas permeable (RGP) lenses. However only 14.9% of the practitioners surveyed dispensed RGP lenses, perhaps only to those whom soft lenses were not suitable. PMMA lenses are hardly used now due to the effects and changes on corneal physiology. This situation is similar to surveys reported for Hong Kong (Cho et al. 1994), Australia (Holden et al. 1989; Sweeney et al. 1991) and Canada (Fonn et al. 1990). Mohd-Ali & Shahrizal (2006) in a survey of the profile of contact lens patients in an optometry clinic in Kuala Lumpur reported that 71% of the clinic patients were prescribed with soft contact lenses, followed by 14% of RGP lenses. However, recent report by Morgan et al. (2008) saw a downward trend in RGP lens prescribing, accounting for only 9% of total lens prescribed in the world with variation from 2% to 24%.

Extended wear is also not a popular modality among practitioners in Malaysia. Holden (1989) reported that in Australia the average percentage of patients who were fitted with extended wear lenses for use on true extended wear basis was 15%. In Malaysia none of the practitioners surveyed recommended true extended wear modality to their patients. Those who dispensed extended wear lenses recommended taking them out after 1-2 days. The complications associated with extended wear lenses have been published extensively. Perhaps these complications deter practitioners from prescribing such modality. Contact lenses made for extended wear was used on daily wear basis as recommended by the majority of practitioners. In a survey of contact lens practitioners in Hong Kong, Yung et al. (2005) reported that the use of contact lenses in overnight wear was limited. Silicone lenses which was approved by Food and Drug Administration USA for extended wear was prescribed by

practitioners mainly for daily wear. It is apparent that optometrists had a big influence on the choice of lenses and modality of lens wear chosen by their patients. Soft lens extended wear accounted for only about 7% of fits worldwide (Morgan et al. 2008).

Disposable lenses were introduced in Malaysia in the 1990s. The concept of wearing and throwing away lenses is popular in Malaysia since its inception. Sixty percent (60%) of the soft lenses prescribed were disposable or frequent replacement lenses. Practitioners are aware of the immense advantage of using disposable lenses and apparently the high initial cost of the lenses does not deter patients from buying them. Reports by Morgan and Efron (2006) on trends on UK contact lens prescribing showed an increase from 40% in monthly replacement lenses prior to the year 1998, increasing to 56% in 2005. Both the daily and monthly replacement frequencies have increased to about 90% of all soft lens modality prescribed in the UK for the year 2003-2005. In Hong Kong planned replacements accounted for 66% of soft lenses prescribed by practitioners (Yung et al. 2005).

The most popular disinfection system used was a chemical based system. This used to be different from countries like Hong Kong (Cho et al. 1994), Australia (Sweeney et al. 1991) or Canada (Fonn et al. 1990) where hydrogen peroxide based system care was most commonly prescribed. Majority of practitioners prescribed multipurpose solutions with disposable or frequent replacements lenses. At the time when the survey in Hong Kong was reported (Cho et al. 1994) the majority of practitioners were still reluctant to dispense disposable lenses. Reasons given include initial high cost of disposable lenses and skepticism by patients who are unwilling to pay in advance for the contact lenses and unsure whether they can be successful with such lenses. In 1989, disposable lenses were just being introduced in Australia and had little effect on the preferred replacement frequency of soft extended wear lenses (Sweeney et al. 1991). However, recent reports saw a shift in prescribing trend in western countries including Australia, with more practitioners prescribing disposable/ frequent replacement lenses, and with it an increase in the prescription of a chemical based system (Yung et al. 2005; Morgan & Efron 2006).

During the time when the survey was taken, weekly enzymatic cleaning was a popular recommendation by practitioners (91%). This compares to 33% in Australia (Sweeney et al. 1991) and over 90% in Hong Kong (Cho et al. 1994). The amount of deposits found on contact lenses among patients here are probably high and that necessitate weekly enzymatic cleaning. Possible reasons include the environment, attitude towards cleaning or due to insufficient tears to wash away debris accumulating on the contact lenses. Published data on the condition of tears of the Malaysian population (Mohidin & Amran 2004) showed that Malaysians have relatively lower tear break up time (BUT) as compared to Caucasians, but similar to Asians residing in Hong Kong. However, enzymatic

cleaning is not an issue now when more practitioners are prescribing disposable/ frequent replacement lenses.

Thirty seven percent (37%) of practitioners said that less than 50% of their patients return for an aftercare consultation. A small group of practitioners said that less than 10% of their patients came back for an aftercare consultation. This shows a rather lax attitude towards contact lens care. Patients feel that it is not important to return for an eye examination after being prescribed contact lenses. These can be either due to patients changing their practitioners or they don't really bother about checking their eyes during lens wear. It is important for practitioners to play a more active role to warn patients of the consequences of poor lens hygiene and lax attitude. Dry eyes seem to be the most common presenting symptom among contact lens patients followed by red eyes and papillary conjunctivitis (Figure 4). More research is needed to find the causes of these dry eyes and whether the condition warrants treatment from practitioners. The drop-out rate for contact lens patients is less than 10% for the majority of the practitioners. It would be interesting to repeat this survey and compare whether there are any changes taking place in the prescribing habits of Malaysian optometrists a decade apart.

CONCLUSION

This survey is an initial study to see the trend of contact lens prescribing in Malaysia. As noted by Holden et al. (1989) the results of such survey present estimates rather than actual figures because not all contact lens practitioners took part in the survey. Opticians who are licensed to practice contact lenses and ophthalmologists who prescribed contact lenses were not included in the survey. There may also be misinterpretation of questions by respondents.

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APPENDIX 1

CONTACT LENS SURVEY

Optometry Department of Allied Health Science Faculty, UKM, Kuala Lumpur
Survey of the state of contact lens practice in Malaysia

1. What is the nature of your practice?
   - ☐ shop – 'ground floor'
   - ☐ shop – 'up stairs'
   - ☐ shop – 'shopping arcade'
   - ☐ clinic
   - ☐ Others (specify) ……..

2. On average, how many patients come to your practice for contact lens fitting per month? (first time wearers)
   - ☐ >10
   - ☐ 5-10
   - ☐ <5

3. On average, what is the age group which commonly comes to you for contact lens fitting?
   - ☐ Children (< 12 years)
     _____%
   - ☐ Teenagers (13-21 years)
     _____%
   - ☐ Adults (>21 years)
     _____%

4. What is the percentage of gender of your average contact lens wearers?
   Female _____%
   Male _____%

5. What type of contact lenses do you do you commonly prescribe?
   - ☐ Soft lens
   - ☐ Semi-hard (rigid gas permeable lenses)
   - ☐ Hard (PMMA)
   - ☐ Others (specify

6. Please choose five brands of contact lenses which you commonly from the following manufacturing companies (including hard, soft and RGP lenses) and number them. 1 = most common, 5 = least common
   - ☐ Allergen/Hydron
   - ☐ Bausch and Lomb
   - ☐ Boston
   - ☐ Ciba Vision
   - ☐ Durasoft
   - ☐ Essilor
   - ☐ Eycon
   - ☐ Igel
   - ☐ Johnson & Johnson/Vistakon
   - ☐ Others (specify)

7. What are the spherical lens powers or spherical equivalent lens powers of contact lenses commonly fitted (including hard, soft and RGP lenses)? Please list 1 (most common) to 5 (least common)
   - ☐ > -9.00D
   - ☐ -9.00D to -6.25D
   - ☐ -6.00D to plano
   - ☐ +0.25D to +9.00
   - ☐ > +9.00D

8. What is the water content of lenses you commonly prescribe?
   - ☐ Low (< 38%)
   - ☐ Moderate (38% - 58%)
   - ☐ High (> 58%)

9. What is the mode of contact lenses you commonly prescribe?
   - ☐ Daily wear
   - ☐ Extended wear
   - ☐ Disposable / frequent replacement programs
   - ☐ Occasional wear (sport, social etc)

10. Answer this question only if you prescribe extended wear lenses. What is the maximum number of nights of continuous wear you recommend to your patients?
    - ☐ > 7 days
    - ☐ 3-5 days
    - ☐ 1-2 days

11. What is the disinfection system commonly recommended to your soft lens patients?
    - hydrogen peroxide
    - chemical (other than peroxide)
    - heat disinfection
    - others (specify)

12. What is the method of lens cleaning commonly recommended to your soft lens patients?
    - Rubbing + saline
    - Cleaner + saline
    - Multipurpose solutions
    - Others (specify)

13. How often do you advise your patients to use an enzyme cleaner (soft lens)
    - Weekly
    - Fortnightly
    - Monthly
    - Others (specify)

14. On average, what is the main reason for contact lens fitting in most of your patients?
    - Cosmetic reasons
    - Better vision
    - Sports
    - Others (specify)

15. Do you fit presbyopic contact lenses?
    - Yes
    - No

16. On average, what percentage of your contact lens patients turn up for after care visit (including soft, hard & RGP lenses)?
    - > 90%
    - 50% - 90%
    - 10% - 50%
    - < 10%

17. What is the contact lens induced complications commonly faced by your patients (including soft, hard & RGP lenses) and number them. 1 = most common, 3 = least common)
    - red eye
    - dry eye
    - giant papillary conjunctivitis
    - keratitis
    - others (specify)

18. On average, what is the dropout rate of your contact lens practice?
    - > 90%
    - 50% - 90%
    - 10% - 50%
    - < 10%

19. Do you charge consultation fee for contact lens fitting?
    - Yes
    - No

If there is any other information that you think may be of use to the survey, please add your comments or suggestions below. You may also use this space for expanding on any of the areas of the questions.

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