

Eye Care Practitioner's Perception to Replacement Schedule of Contact Lenses

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Abstract

Background: Non-compliance to manufactures recommended replacement frequency is expected to result in ocular complications. While many reports the percentage of people who are non-compliant, only some report pay attention to the care and maintenance instructions that eye care practitioners provide to their patients. The goal of this study is to draw attention to the instructions imparted by eye care practitioner to their user and explore the measure taken by them to reduce contact lens non-compliance.

Method: Eye care practitioner from Mumbai who were willing to provide consent and share their experience participated in this anonymous online survey which was designed with the help of focused group discussion with a panel of experts.

Results: Majority of eye care practitioner had 5 years or more clinical experience in the field of contact lens. About 81% contact lens users in their practice were between the age of 20-29 years. These eye care practitioners believed their contact lens user non-compliant to replacement schedule of contact lens, was 35% due to forgetting the actual day of replacement, 46% as they forget to reorder their lenses, 33% believe to do this to save money, 41% believe contact lens user have lack of time and 36% believe they don't change their lenses as there is no discomfort in continuing. Of all 55% of eye care practitioner agree in giving written information, SMS or telephonic reminder and agreed that increase in follow up would improve compliance. However, 57% of eye care practitioner strongly agree that contact lens practice should be restricted to Eye care practitioner only to increase compliance in contact lens users.

Conclusion: Reminders to follow up and to buy contact lens as per their previous purchase can help in reducing majority of non-compliance to replacement schedule. In addition, eye care practitioner strongly agrees to restrict contact lens practice to Eye care practitioner only.

INTRODUCTION

Contact lenses (CL) are one of the common modes of refractive error correction, approximately 125 million people wear CL worldwide: of these about 80% wear soft CL.^{1,2} Although safe in most of the cases CL can cause serious eye infections, affecting one out of 500 users per year.³ Use of CL beyond recommended period by manufacturer has been repeatedly found to be one of the common factors of non-compliance with potential to cause adverse effects.⁴ An area that needs attention is the care and maintenance instructions that Eye Care practitioners (ECP) provide to their patients. Approximately 40-90% of CL users do not follow CL care instructions.⁵ Although CLs wear has higher chances of eye related complications compared to spectacles; the CL related complications are often related with patient non-compliance⁶ or improper guidance from the practitioner.⁷⁻¹¹ It can be positively argued that CL itself is safe to use if all care-and-maintenance steps are followed accurately.

Non-compliance is one of the major problems in health care field,^{12,13} including CL wear also.¹³ Since past few decades, the connection between CL complication and patient non-compliance to lens care and maintenance have been heightened.⁷⁻⁹ Recent studies suggest that CL wearer non-compliance related due to insufficient knowledge imparted at the time of dispensing and not enough repetition of instructions for the safe wear by the care providers is practiced.¹⁵ As we have substantial research supporting that patient non-compliance leads to 90% of CLs related complication, this research will help us understand gap and the guidance provided by ECP.¹⁶⁻²⁰ CL care compliance varies among patients and depend on guidance from their ECP. While it is necessary that patients follow all instructions provided by the ECP. Negligence towards patient education by ECP can directly lead to CL complication in the long run. Most of the patient follow the lens care, maintenance and replacement schedule as instructed however a few deliberately indulge in non-compliance for various reasons such as to save money, lazy to track replacement dates, or not convinced to throw the lenses as they feel fine and contact lens still provide clear vision.^{6,21,22} While many reports the percentage of people who are non-compliant, only some report pay attention to the care and maintenance instructions that ECP provide to their patients.²³ Hence, this study evaluates ECP's perception and steps taken by them to reduce patient non-compliance to replacement schedule of CL in urban India.

Objective

To evaluate eye care practitioner's perception towards manufacturers recommended replacement schedule of contact lenses among contact lens users from Mumbai, India

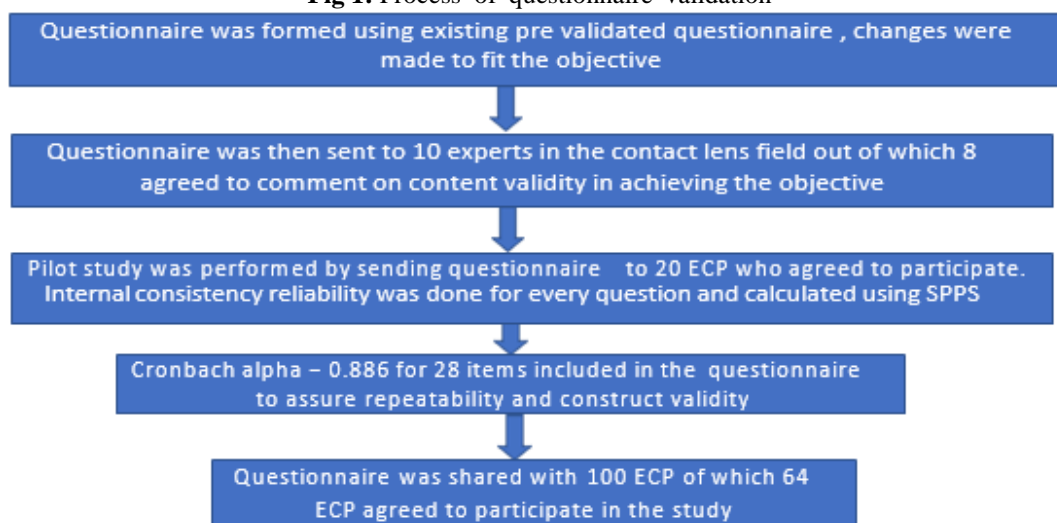
METHODOLOGY

Pilot Study

A literature review helped identifying suitable questions for development of the draft questionnaire tool. The draft tool was then shared with experts in the field of contact lenses. An expert was a qualified ECP with at least 10 years or more experience in soft contact lens clinical practice. Ten such experts were approached out of which eight agreed to review the questionnaire draft and provided their recommendations. Experts first commented if each item of the questionnaire was relevant to achieve the objective and those voted as relevant were critically appraised for its wording. All the comments were considered, and changes were made, the next draft was sent to the experts for the final approval (Fig 1)

This questionnaire was then sent to 20 ECP who agreed to participate in the questionnaire study for internal consistency with Cronbach's alpha statistical analysis.

Fig 1: Process of questionnaire validation



For the final stage the questionnaire was then send via an online google form to 100 ECP out of which 64 ECP consented to participate and completed the survey questionnaire.

Study Population

ECP that meet the inclusion/exclusion criteria were provided with an online survey questionnaire link via e-mail, a hard copy/ printable version was also made available on request. All ECP with at least two years of experience in CLs clinical practice who are based in and around Mumbai, were invited to participate in this anonymous survey. Those who were willing signed an informed consent prior to enrollment. After initial invitation, those who have not responded were sent reminders after 1 week and 4 weeks. Data from all the participants were considered for the study.

Study Procedures

A questionnaire-based evaluation for ECP perception towards educating their patients with manufactures recommended replacement schedule was performed. The questionnaire was designed in 7 sections and had a total of 28 Questions. The structured questionnaire has sections that capture information about experience in CL dispensing, type of CL practice, commonly used brands, and preferred replacement frequency for prescription (if any), ECP opinion about patient compliance with replacement schedule, ECP perception towards importance of patient education and patient's compliance according to the ECP. A segment was dedicated to find out methods of communicating complex care and maintenance regime to their patients e.g., SMS reminders, leaflets with information, oral explanation, or a combination of any of these etc.

Statistical Analysis

To this research, compliance was defined as whether the patient considered to be compliance to the manufactures recommended replacement frequency (MRRF) of contact lens according to the ECP.

Chi square tests were used to examine if there were significant differences in continuous variables between two groups (such as years of contact lens practice between patient education on dispensing and reasons of non-compliance). Statistical significance was set at $P < 0.05$. Stepwise logistic regression analysis was conducted to identify significant behaviors associated with years of experience.

RESULTS

The initial draft questionnaire tool had 25 items and was increased to 28 items divided in 7 sections after content validity through expert review. The average contact lens clinical practice of experts was 10 ± 2 years. The final draft was unanimously approved by all the experts for pilot study.

Practitioner demographics

The study population consisted of 90.6% female (n=58) and 9.4% male (n=6). Over 2/3rd (n=50) practitioners had more than 5 years of contact lens clinical experience. There was no significant change between years of clinical practice to male and female practitioner (P < 0.05). However, 81.3% of the CL user according to the practitioner fall in the age group of 20-29 years. (Table 1). There was no significant change between reasons of non-compliance to contact lens wear and age of CL user. There was no significance between age of CL user and purchase of CL at a time.

Disposable CL bought at a time for 6 months was reported to be 46%, for more than 6 months was 30.2% and for 3 months was reported by 17.5% (Fig 2). CL practitioners prefer/suggest 68.3% monthly disposable, 20.6% daily disposable and 9.5% two-week disposable modality to their CL users (Fig 3). CL practitioners prefer/suggest both Bausch & Lomb and Acuvue (J&J) equally at 27%, whereas 17.5% prefer /suggest CibaVision and 28.6% other available brands in the market.

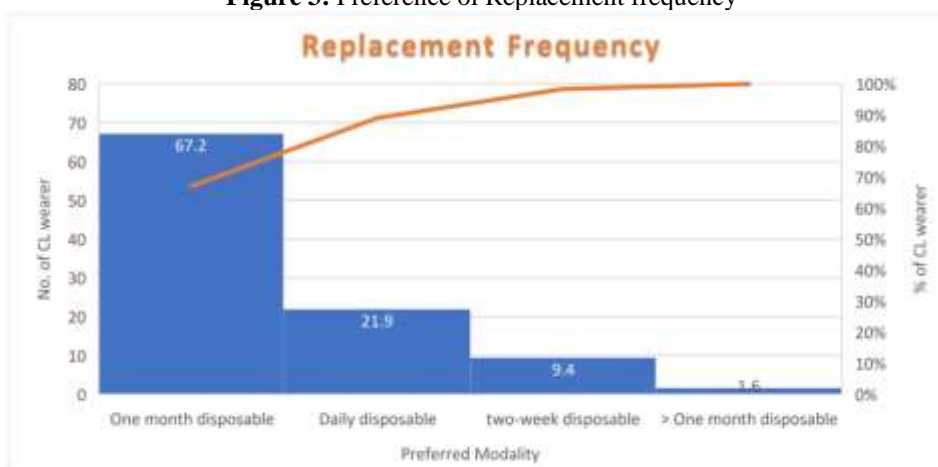
Table 1: Age wise distribution of contact lens users presented as prevalence in %.

Age group of CL user	Percentage
<20yrs	10.90%
20-29yrs	81.30%
30-39	6.30%
>40yrs	1.60%

Figure 2: Number of CL pairs bought at a time.



Figure 3: Preference of Replacement frequency



Practitioner Dispensing perception.

P-value were calculated to find out significance of ECP experience effects CL wearer compliance and steps taken by ECP to improve compliance to CL wear. P-value was set at <0.05. However, there was no significant association found in ECP experience effect on CL wearer compliance and Patient care followed dispensing of CL.

P-value was calculated to find out significance of Modality preference suggested depended on experience of ECP or according to CL wearer requirement. P-value was set at <0.05. However, there was no significant association found in CL Modality suggested to the CL wearer to ECP experience or CL wearer affordability, work environment and diagnosis of dry eye.

Just over 90.6% of the ECP inform their CL users when to discard their lenses as per MRRF at the time of dispensing. However only, 59.3% prefer scheduling regular follow up visits to avoid non-compliance. A total of 28.12% prefer sending reminder via SMS to discard their lenses. Only 31.25% of CL practitioner believe that their CL users are compliant to their replacement schedule and discard their lenses as recommended (Fig 4). While 12.5% of CL practitioner believe that non-compliant to recommended replacement schedule can lead to CL related complications, only 43.75% CL practitioner provided written information for CL lens care and maintenance at the time of dispensing. (Fig 5)

Figure 4: ECP follow up Practice.

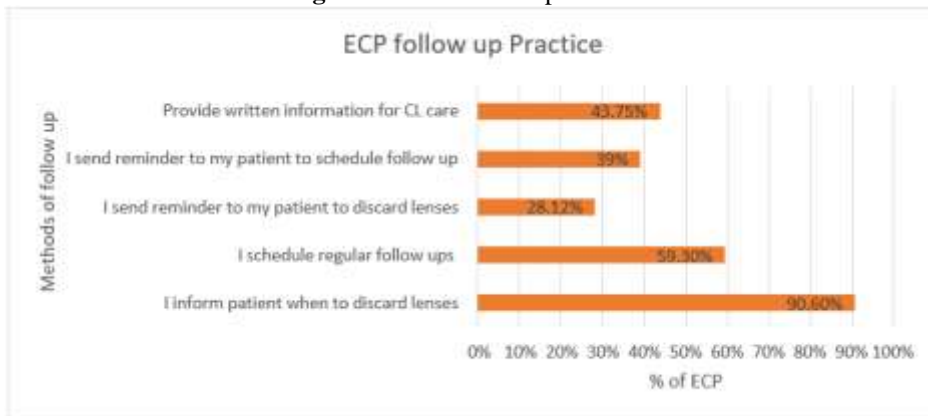


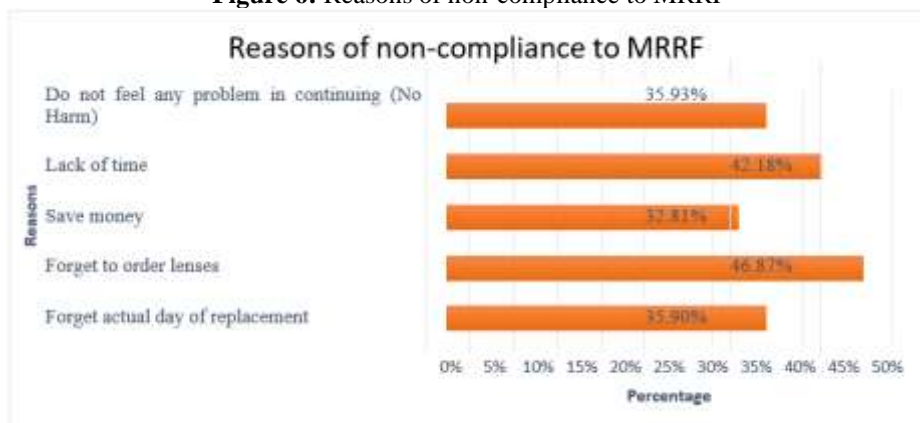
Figure 5: ECP Perception



P-value was calculated to find out association whether age of user has an impact on buying preference or reasons of non-compliance to CL wear. P-value was set at <0.05. However, there was no significance found on CL wearer buying preference and their reasons of non-compliance to CL wear to their age.

ECP opined that CL user equally prefer ECP or elsewhere to buy CLs. According to ECP the Reasons of non-compliance to CL by user was almost half of them forget to reorder lenses, closeto 36% forget the actual day of replacement, while approximate 33% wish to save money as thereis no discomfort in continuing and around 42% complain of lack of time. (Fig 6)

Figure 6: Reasons of non-compliance to MRRF



Only a little over 50% of ECP agree that they give written information, SMS or telephonic reminder and increase in follow up would improve compliance among CL users (Fig 7). However, 60% of practitioner strongly agree that CL practice should be restricted to ECP only to increase compliance in CL users (Fig 8)

Figure 7: Suggestion for Betterment

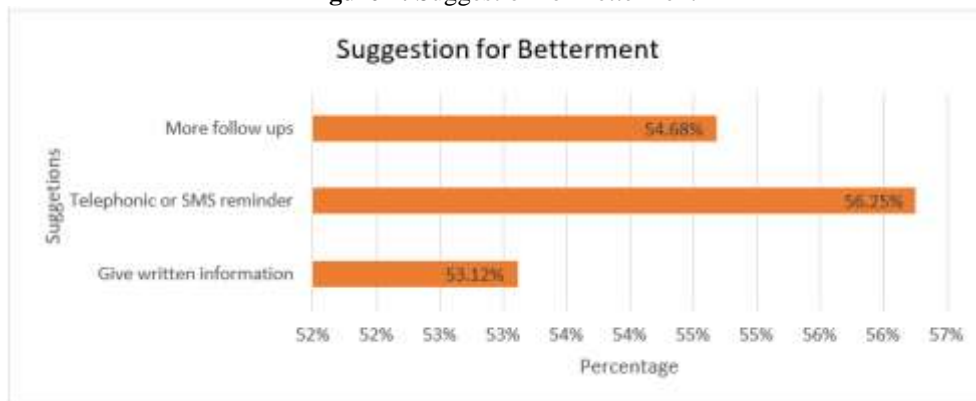


Figure 8: ECP Opinion for CL practice



DISCUSSION

Most of the previous studies focus on barriers and perception of the CL wearers, our study focuses perception of ECP with special focus on compliance to replacement frequency. This study gathers knowledge on steps taken by ECP's to educate their CL user about discarding CL as per MRRF. In this research we have tried to evaluate various aspects of CL practice in Urban area like Mumbai.

Our study tries to understand the ECP's background and years of experience in CL field. However, ECP holding a degree of at least bachelor's in optometry were only included in this research. Understanding the pairs of CL bought by a wearer at a time from the ECP helps us evaluate one of the reasons of non-compliance being forgetting to reorder lenses. Understanding the most common modality suggested by the ECP in the CL wearer in the practice. ECP preference on any specific brand most prescribed to their CL wearers.

This questionnaire consists of a section for understanding the various factors and ECP considers while suggesting a specific modality or brand to the CL wearer. Factors such as affordability, work environment, hours of usage requirement and dry eye evaluation. It also tries to take into account where their CL wearers prefer buying their CLs like their clinic or over the counter from any store or online. Understanding ECP point of view of suggesting or preferring a specific modality of CL, a specific brand of CL correlating to financial background of CL user, age of CL user, work or home environment of CL user was enlightening. All this information in turn can help us draw steps to reduce non-compliance to MRRF by figuring factors possible contributing to non-compliance.

Another section of this questionnaire is dedicated to the instructions provided by ECP regarding when does the CL wearer should discard their lenses, come for regular follow up and whether reminders are sent for the same and written information is given to the CL wearers to evaluate whether patient was informed about MRRF of the CL dispensed to them. This section also tries to understand as per the ECP whether their CL wearers comply to the MRRF as instructed by ECP which in turn will help us understand the percentage of CL wearers being non-compliance to MRRF in their practice. It also evaluates the percentage of CL complication cases experienced in the practice on an average due to non-compliance to MRRF. This research helped in shedding light to an important area of follow up to be so important which can help reduce CL non-compliance to MRRF.

Next section is like research done in the past dedicated to understanding the reasons of CL wearers non-compliance to MRRF giving the most common options as forget actual day of replacement, forget to reorder, save money, lack of time and do not feel any problem in continuing. However, in this study this section is questioned to the ECP regarding their CL wearers. Another section is dedicated to the suggestions by ECP for improving the CL practice. Last section in the questionnaire is dedicated to restricting the CL practice to ECP alone. Majority of the ECP strongly agree to restrict CL practice to ECP only. Dispensing of CL by an ECP alone will help a great deal in keeping track of CL pairs bought at a time by a CL user, to arrange regular follow ups and reminder of buying new pairs which almost 60% of ECP agreed.

CL are also called as a medical device. Like medicine can be bought from a medical store only with Doctor's prescription, why aren't CL sold by ECP alone as they have the knowledge of wear and care which is important at the time of dispensing. Vision achieved by these medical devices are called to avoid refractive error blindness then why not make the use CL safer by prohibition of sale of CL from over the counter or online.

CONCLUSIONS

The result of this study indicate maximum of the CL user are female falling in the age group of 20-29 years. The results from this study indicate that majority of ECP prefer prescribing monthly disposable lens modality over all the other modalities with no specific brand preference. However, preferring to suggest disposable contact lens according to the affordability of CL user. ECP perception in terms of CL user non-compliance majorly was due to failure of user to timely reorder lenses due to lack of time and no discomfort caused by the current lenses. In addition to this, ECP believe a reminder in the form of SMS or telephonic or follow up will be of great help in reducing CL non-compliance to MRRF. Restricting sale of CL to ECP alone would also help in reducing CL complications caused due to CL wear over the MRRF.

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