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Presbyopic and non-presbyopic contact lens opinions and vision correction preferences

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ABSTRACT

Purpose: To compare vision correction preferences, refractive error, and gender of non-presbyopes and presbyopes.

Methods: Adults who wear spectacles or contact lenses completed a survey about refractive correction opinions and refractive error was measured.

Results: Of the 304 subjects, 38.2% were presbyopic (≥ 40 years) and 59.2% were female. Spectacles were the primary vision correction for 78.0% of subjects. Compared to contact lens wearers, the proportion of presbyopes was higher ($p=0.006$) in spectacle wearers. There was no difference in the proportion of presbyopes and non-presbyopes who have tried contact lenses ($p=0.2$) or who would prefer to wear contact lenses ($p=0.2$). In contact lens wearers, there was no difference in the proportion of presbyopes and non-presbyopes with a history of temporary discontinuation ($p=0.9$). Within the contact lens wearing group, there was no refractive error difference between presbyopes and non-presbyopes (spherical equivalent $p=0.6$; power vector J0 $p=0.5$; power vector J45 $p=0.4$; anisometropia $p=0.2$). Overall, contact lens wearers were more likely to be female ($p=0.004$). There was no difference in gender in presbyopic and non-presbyopic contact lens wearers ($p=0.5$).

Conclusions: Presbyopes and non-presbyopes have similar opinions about spectacles and contact lenses. Presbyopes of all refractive errors prefer contact lens correction when good vision and comfort can be achieved. Eye care providers should not assume that presbyopia, refractive error, or gender are factors that preclude a patient from being interested in contact lens wear.

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While survey studies exist that query eye care practitioners about their prescribing habits and opinions of various lens designs [1–4], few studies ask patients what visual corrections they prefer. Presbyopes are known to be a difficult group to initiate and maintain satisfactory contact lens wear. As presbyopia progresses, visual correction at all distances becomes more complex. As well, symptoms of dryness and discomfort tend to increase with age [5]. This combination of factors likely contributes to the tendency of contact lens wearers to discontinue contact lens wear as they grow older [6,7], but preconceptions of eye care providers may influence the relatively low number of presbyopic contact lens prescriptions worldwide [3]. Morgan et al., suggested that the low utilization of presbyopic contact lens designs was likely due to a lack of fitting skills/clinical knowledge by contact lens fitters and a general preconception that visual compromises introduced by presbyopic designs are too great [3]. Despite these potential preconceptions, recent data suggests that presbyopic (multifocal or monovision)

contact lens wearers actually wear their lenses more frequently than more traditional lens modalities like spherical and toric lenses [8].

Advancements and innovations in contact lens technology have resulted in a market that boasts an impressive array of power profiles, correction types, and materials. Presbyopic contact lens options, in particular, have improved and increased in recent years [1]. Lenses that offer simultaneous optical designs allow presbyopic contact lens wearers to enjoy corrected vision at all distances, without compromising their stereovision with monovision or relying on reading glasses for near tasks [9,10]. These new designs and material innovations have likely contributed to the increase in presbyopic contact lens prescribing in recent years [1,2,11], but presbyopic contact lens modalities are still under-prescribed around the world [3,4].

How do presbyopic patients differ from their non-presbyopic counterparts in opinions of vision correction preference? When presbyopic or non-presbyopic patients do or do not succeed with contact lenses, are there differences in gender or refractive error? This survey study aimed to determine the vision correction

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preferences (spectacles versus contact lenses) of non-presbyopes and presbyopes and how refractive error and gender are related to these preferences

1. Methods

For this prospective cross-sectional study, subjects were recruited at the Center for Science and Industry (COSI) Life Labs in Columbus, OH. COSI, a science museum, is a unique setting to recruit subjects from the general population for research studies. All subjects provided written informed consent. This study followed the tenets of the Declaration of Helsinki and was approved by the Institutional Review Board of the Ohio State University.

COSI visitors that reported habitually wearing some form of refractive correction (contact lenses or spectacles) for distance, near, and/or full-time correction and met all inclusion criteria (Table 1) were asked to answer questions about their refractive error correction and demographic information on an iPad. Study data was collected and managed using Research Electronic Data Capture (REDCap) tools hosted at the Ohio State University [12]. Subjects who reported wearing spectacles as their primary vision correction were asked if they had previously tried contact lenses and, if so, why they discontinued contact lens wear. Subjects who reported contact lenses as their primary vision correction were asked if they had ever discontinued lens wear for a significant (≥ 1 month) amount of time and, if so, why they temporarily discontinued contact lens wear and why they resumed lens wear. All spectacle wearers who reported a history of contact lens wear and contact lens wearers were asked what their preferred form of vision correction would be (spectacles or contact lenses), assuming they could achieve good comfort and vision. Spectacle wearers with no history of contact lens wear were not asked this question because they had no contact lens experience on which to base their preference. After completing the survey, subjects were asked to remove their habitual vision correction and autorefractometry was performed on each eye using a Grand Seiko autorefractor while the subject viewed a distance target positioned at approximately 20 m. Autorefractometry data for both eyes were recorded in each subject's REDCap record.

Statistical analysis was performed using SPSS Version 24 (IBM). The level of significance used to make conclusions in this study was $p < 0.05$. Spherical equivalent (SE) values for each eye were calculated and averaged to produce a mean SE for each subject. A mean binocular magnitude of astigmatism was determined for each subject. Cylinder and axis components of refractive error were converted to power vectors (J0 and J45, as described by Thibos et al. [13] and Raasch et al. [14]) and a mean binocular value was produced for both vectors on all subjects. Anisometropia values were calculated using the absolute value of the difference in SE between the two eyes in each subject. Chi-square tests were

used to compare groups of categorical variables, and t -tests were performed when comparing means of continuous variables to categorical groups. Multivariate binary logistic regression was used to determine if gender, SE, J0, J45, or anisometropia varied between age groups (non-presbyopes and presbyopes) and vision correction groups (spectacle and contact lens wearers).

2. Results

Data from 304 subjects were collected. The mean age of the entire sample was 37.1 ± 14.4 years (range: 18–76 years), 59.2% of the sample was female ($n = 180$), and 38.2% ($n = 116$) of subjects were in the presbyopic age range (≥ 40 years). When asked to identify their primary vision correction (spectacles or contact lenses), 78.0% ($n = 237$) of the sample reported wearing spectacles for the majority of their vision correction needs. The proportion of presbyopes was higher ($p = 0.006$, $X^2 = 7.4$) in the spectacle group (42.2% presbyopic, 100/237) compared to the contact lens wearing group (23.9% presbyopic, 16/67). The proportion of presbyopes spectacle wearers (42.2%, 100/237) was higher than the proportion of presbyopic contact lens wearers (23.9%, 16/67, $X^2 = 7.4$, $p = 0.006$).

Table 2 shows a comparison of age, gender, and refractive error in non-presbyopes versus presbyopes and spectacle wearers versus contact lens wearers in the entire sample. Independent t -tests, Chi-square testing, and binary logistic regression were performed to determine if there were differences between the two age groups and vision correction groups. Table 3 compares age groups (non-presbyopes versus presbyopes) in each of the spectacle and contact lens wearing vision correction groups. Independent t -test, Chi-square testing, and binary logistic regression were performed to determine if differences occurred between the two age groups in each vision correction group. Subjects who reported wearing spectacles as their primary vision correction were asked if they had ever tried wearing contact lenses. Table 4 compares the age, gender, and refractive error of non-presbyopic and presbyopic spectacle wearers that reported trying contact lenses in the past.

Spectacle wearers were asked if they had ever tried contact lens wear and, if so, what form of vision correction they would prefer if they could achieve good vision and comfort. Contact lens wearers were asked if they had ever discontinued contact lens wear for a significant amount of time (> 1 month). The results of these three questions, compared between non-presbyopic and presbyopic subjects, are displayed in Fig. 1. The percentage of spectacle wearers that would prefer contact lens correction was significantly different than zero in the entire sample ($t = 36.5$, $p < 0.0001$), non-presbyopes ($t = 27.4$, $p < 0.0001$), and presbyopes ($t = 24.5$, $p < 0.0001$).

All spectacle wearers who reported wearing contact lenses in the past were asked to choose the primary reason for discontinuing contact lens wear. Fig. 2 shows the reasons reported by the entire sample, non-presbyopes, and presbyopes. Contact lens wearers who reported a period of lens discontinuation were asked to report the primary reason for this discontinuation (Fig. 3). This group of contact lens wearers was also asked to report the primary reason they chose to resume contact lens wear (Fig. 4).

3. Discussion

In this sample, non-presbyopic and presbyopic subjects reported similar experiences with and opinions of contact lenses. The proportion of spectacle wearing presbyopes that had tried contact lenses in the past and that would prefer to wear contact lenses, if their visual and comfort needs could be met, was not different when compared to non-presbyopes. As well, the

Table 1
Inclusion Criteria.

Inclusion Criteria
Age ≥ 18 years
Distance visual acuity 20/30 or better in both eyes (with habitual correction on a Bailey-Lovey logMAR chart)
Reports spectacle or contact lens wear
No history of ocular surgery
No history of the following ocular conditions:
Glaucoma
Macular degeneration
Retinal detachment
Keratoconus
Corneal disease

Table 2

Comparison of non-presbyopes (<40 years) versus presbyopes (≥40 years) and spectacle wearers versus contact lens wearers in the entire sample (n = 304) with univariate (t-tests Chi-square tests) and multivariate (binary logistic regression) analysis.

	Non-Presbyopes (n = 188, 61.8%)	Presbyopes (n = 116, 38.2%)	Difference between age groups?		Spectacle Wearers (n = 237, 88.0%)	Contact Lens Wearers (n = 67, 22.0%)	Difference between vision correction groups?	
			Univariate Analysis	Multivariate Analysis			Univariate Analysis	Multivariate Analysis
Mean Age (years) (range)	27.6 ± 6.3 (18-39)	52.5 ± 9.4 (40-76)	t = -27.7 p = 0.006	-	38.3 ± 14.7 (18-76)	32.7 ± 12.2 (18-74)	t = 2.9 p = 0.005	-
Gender (% female)	59.0% (111/188)	59.5% (69/116)	X ² = 0.006 p = 0.9	OR = 1.1 95% CI: 0.7-1.7 p = 0.8	54.9% (130/237)	74.6% (50/67)	X² = 8.5 p = 0.004	OR = 2.5, 95% CI: 1.3-4.8 p = 0.004
Refractive Error Mean Spherical Equivalent (SE)	-3.67 ± 3.13 (-13.30-3.87)	-2.51 ± 4.14 (-17.56-6.62)	t = -2.8 p = 0.006	OR = 1.1 95% CI: 1.0-1.2 p = 0.02	-2.68 ± 3.43 (-15.24-6.62)	-5.16 ± 3.48 (-17.56-3.28)	t = 5.2 p < 0.0001	OR = 0.8 95% CI: 0.7-0.9 p < 0.0001
Mean Astigmatism Magnitude (D)	0.81 ± 0.74 (0-4.81)	0.81 ± 0.48 (0-2.56)	t = 0.03 p = 1.0	-	0.85 ± 0.69 (0-4.81)	0.68 ± 0.46 (0-2.00)	t = -1.9 p = 0.07	-
Mean Astigmatism: J0 (D)	0.16 ± 0.68 (-2.21-3.50)	-0.9 ± 0.55 (-1.64-1.67)	t = 3.4 p = 0.001	OR = 0.5 95% CI: 0.3-0.8 p = 0.004	0.6 ± 0.68 (-2.22-3.50)	0.09 ± 0.51 (-0.86-1.46)	t = -0.4 p = 0.7	OR = 0.9 95% CI 0.6-1.5 p = 0.7
Mean Astigmatism: J45 (D)	-0.03 ± 0.36 (-1.26-1.96)	-0.04 ± 0.36 (-0.91-1.53)	t = 0.3 p = 0.7	OR = 1.3 95% CI: 0.6-2.6 P = 0.5	-0.04 ± 0.38 (-1.26-1.96)	-0.03 ± 0.23 (-0.56-0.50)	t = -0.07 p = 0.9	OR = 0.8 95% CI 0.3-1.8 p = 0.5
Anisometropia (based on SE)	0.58 ± 0.68 (0-4.87)	0.44 ± 0.39 (0-2.19)	t = 1.9 p = 0.05	OR = 0.7 95% CI: 0.4-1.0 p = 0.07	0.52 ± 0.54 (0-4.75)	0.53 ± 0.72 (0-4.87)	t = -0.1 p = 0.9	OR = 1.0, 95% CI 0.6-1.6 p = 0.9

Statistically significant results (p < 0.05) are bolded.

proportion of contact lens wearers who had a history of a discontinuation period, was the same between age groups (Fig. 1). Spectacle-wearing presbyopes preferred contact lenses as often as non-presbyopes (Fig. 1), demonstrating that presbyopic spectacle wearers have a meaningful interest in contact lens wear. In both age groups and in the overall sample, more than half of the spectacle wearers reported a preference for contact lenses. The majority of spectacle wearers, therefore, do not prefer their spectacles. This finding should encourage eye care providers to discuss contact lens options with all spectacle wearers, regardless of age group, since this group of patients has an obvious interest in contact lens wear.

In the overall sample and in spectacle wearers, presbyopes were significantly less myopic than the non-presbyopes (Tables 2 and 3). This finding was likely a result of hyperopic refractive error shifts that

occur with physiological changes in the anatomical lens with age [15]. As well, the sample contained presbyopes who wore spectacles for reading only and were, therefore, emmetropic. Further, non-cycloplegic refractive error was measured, which may have contributed to the fact that non-presbyopes were more myopic. When comparing presbyopes to non-presbyopes, magnitude of astigmatism was not different in the spectacle or contact lens wearing groups (Table 3). Vector analysis of astigmatism showed that J0 was different (more against-the-rule) for presbyopes in the entire sample (Table 2) and in spectacle wearers (Table 3). This finding, combined with the fact that magnitude of astigmatism was not different between the age groups, supports evidence that astigmatism shifts to against-the-rule with age [16], and suggests that astigmatism was not different between groups. In spectacle wearers who reported permanently discontinuing contact lens wear,

Table 3

Comparison of non-presbyopic (<40 years) and presbyopic (≥40 years) spectacle and contact lens wearers in the entire sample (n = 304) with univariate (t-tests Chi-square tests) and multivariate (binary logistic regression) analysis.

	Spectacle Wearers (n = 237)		Difference between age groups?		Contact Lens Wearers (n = 67)		Difference between age groups?	
	Non-Presbyopes (n = 137, 57.8%)	Presbyopes (n = 100, 42.2%)	Univariate Analysis	Multivariate Analysis	Non-Presbyopes (n = 51, 76.1%)	Presbyopes (n = 16, 23.9%)	Univariate Analysis	Multivariate Analysis
Mean Age (years) (range)	27.7 ± 6.3 (18-39)	52.9 ± 9.4 (40-76)	t = -24.6 p = 0.001	-	27.2 ± 6.4 (18-39)	50.3 ± 9.0 (40-74)	t = -11.3 p < 0.01	-
Gender (% female)	54.0% (74/137)	56.0% (56/100)	X ² = 0.09 p = 0.8	OR = 1.1 95% CI: 0.6-1.8 p = 0.8	72.5% (37/51)	81.3% (13/16)	X ² = 0.5 p = 0.5	OR = 1.5 95% CI: 0.3-6.5 p = 0.6
Refractive Error Mean Spherical Equivalent (SE)	-3.19 ± 3.10 (-13.30-3.87)	-1.99 ± 3.74 (-15.24-6.62)	t = -2.7 p = 0.008	OR = 1.1 95% CI: 1.0-1.2 p = 0.03	-4.98 ± 2.81 (-12.19-0.22)	-5.74 ± 5.15 (-17.56-3.28)	t = 0.8 p = 0.5	OR = 1.0 95% CI: 0.8-1.1 p = 0.6
Mean Astigmatism Magnitude (D)	0.86 ± 0.81 (0-4.81)	0.83 ± 0.50 (0-2.56)	t = -0.3 p = 0.7	-	0.67 ± 0.48 (0-2.00)	0.71 ± 0.39 (0-1.69)	t = 0.3 p = 0.8	-
Mean Astigmatism: J0 (D)	0.18 ± 0.73 (-2.21-3.50)	-0.11 ± 0.55 (-1.64-1.67)	t = 3.3 p = 0.001	OR = 0.5 95% CI: 0.3-0.8 p = 0.007	0.12 ± 0.52 (-0.77-1.45)	0.02 ± 0.51 (-0.86-1.14)	t = 0.6 p = 0.5	OR = 0.7 95% CI: 0.2-2.3 p = 0.5
Mean Astigmatism: J45 (D)	-0.02 ± 0.39 (-1.26-1.96)	-0.06 ± 0.37 (=0.01-1.53)	t = 0.7 p = 0.5	OR = 1.2 95% CI: 0.5-2.5 p = 0.7	-0.05 ± 0.22 (-0.58-0.37)	0.03 ± 0.25 (-0.34-0.50)	t = -1.3 p = 0.2	OR = 4.5 95% CI: 0.3-66.1 p = 0.3
Anisometropia (based on SE)	0.57 ± 0.62 (0-4.75)	0.46 ± 0.40 (0-2.19)	t = 1.6 p = 0.1	OR = 0.7 95% CI: 0.4-1.2 p = 0.2	0.58 ± 0.81 (0-4.87)	0.35 ± 0.28 (0-1.13)	t = 1.2 p = 0.3	OR = 0.4 95% CI: 0.09-1.7 p = 0.2

Statistically significant results (p < 0.05) are bolded.

Table 4
Comparison of non-presbyopic (<40 years) and presbyopic (≥40 years) spectacle wearers who reported permanently discontinuing contact lens wear (n = 123) with univariate (t-tests Chi-square tests) and multivariate (binary logistic regression) analysis.

	Non-Presbyopes (n = 76, 61.8%)	Presbyopes (n = 47, 38.2%)	Difference between age groups?	
			Univariate Analysis	Multivariate Analysis
Mean Age (years) (range)	28.0 ± 6.2 (18–39)	53.5 ± 9.4 (40–72)	t = -18.2p < 0.01	-
Gender (% female)	57.9% (44/76)	61.7% (29/47)	X ² = 0.2 p = 0.7	OR = 1.0 95% CI: 0.5–2.2 p = 1.0
Preferred vision correction	56.6% (43/76) contact lenses	68.1% (32/47) contact lenses	X ² = 1.6 p = 0.2	OR = 0.2 95% CI: 0.2–1.1 p = 0.1
Refractive Error				
Mean Spherical Equivalent (SE)	-4.32 ± 2.95 (-13.30–3.87)	-3.51 ± 3.54 (-11.90–4.00)	t = -1.4 p = 0.2	OR = 1.1 95% CI: 1.0–1.2 p = 0.2
Mean Astigmatism Magnitude (D)	0.67 ± 0.58 (0–3.00)	0.98 ± 0.52 (0.13–2.56)	t = 3.0 p = 0.004	-
Mean Astigmatism: J0 (D)	0.09 ± 0.49 (-1.63–1.75)	-0.06 ± 0.68 (-1.64–1.67)	t = 1.4 p = 0.2	OR = 0.8 95% CI: 0.4–1.6 p = 0.4
Mean Astigmatism: J45 (D)	0.00061 ± 0.37 (-1.07–1.96)	-0.11 ± 0.39 (-0.91–0.97)	t = 1.5 p = 0.1	OR = 0.4 95% CI: 0.1–1.4 p = 0.2
Anisometropia (based on SE)	0.55 ± 0.57 (0–2.88)	0.53 ± 0.45 (0–2.19)	t = 0.2 p = 0.9	OR = 1.0 95% CI: 0.5–2.1 p = 0.1

Statistically significant results (p < 0.05) are bolded.

the magnitude of astigmatism was higher in presbyopes (Table 4). The mean astigmatism difference observed between non-presbyopes and presbyopes in this group, however, was approximately 0.30 diopters, which may not be clinically meaningful. Aside from the differences discussed above, there were not meaningful differences in refractive error when comparing presbyopic and non-presbyopic contact lens and spectacle wearers.

Contact lens wearers, in the entire sample, were more likely to be younger, female, and more myopic (Table 2). This age and gender trend has been reported in previous studies [6,7,11]. While females were the predominant gender in both contact lens age groups, there was no significant difference in the proportion of women contact lens wearers in presbyopes and non-presbyopes (Table 3). A 2011 survey that reported contact lens fitting patterns of eye care providers found that the proportion of women fitted in contact lenses was greater in presbyopes compared to non-presbyopes [3]. This large, international survey, however, defined presbyopic age as ≥45 years, while our study used a ≥40 year criterion [3]. When we applied this increased threshold age criterion to our sample, we still found no meaningful difference in the proportion of women in the newly defined presbyopic group (n = 13, 76.9% female) compared to the non-presbyopic group of contact lenses wearers (n = 54, 74.1% female). This result suggests that, despite previously reported fitting trends [3], presbyopic women are as motivated to pursue and possibly maintain contact lens wear as non-presbyopic contact lens wearers. In spectacle

wearers, there was also no significant gender difference in presbyopes and non-presbyopes.

As reported by previous studies [6,7,17], discomfort was the primary reason for permanent discontinuation, regardless of age group (Fig. 2). Vision quality (distance, near, or overall) was not a substantial factor in discontinuation. This finding may suggest that optical and vision correction quality on the current contact lens market is superior to technology related to comfort. Conversely, it is also possible to speculate that “discomfort” symptoms could be attributed to both ocular or external discomfort (dryness, irritation, etc.) and visual or internal discomfort (eyestrain, fatigue, etc) as suggested by Sheedy, et al. [18]. A 2016 survey of a large group of current and lapsed presbyopic contact lens wearers found that vision quality and discomfort were reported equally as often as primary reasons for discontinuation [19]. The sample surveyed in the 2016 study was a presbyopic clinic-based population that had been wearing contact lenses for some period of time during presbyopia. The subjects in the current study, however, varied in age range. The presbyopes who reported discontinuation due to comfort may have discontinued contact lens wear well before the onset of presbyopia. We cannot determine the exact reason for the discrepancy between this study and the 2016 survey study, because we did not ask subjects to report the date of contact lens discontinuation in the present study.

Approximately one quarter of the contact lens wearing subjects reported experiencing a period of contact lens discontinuation.

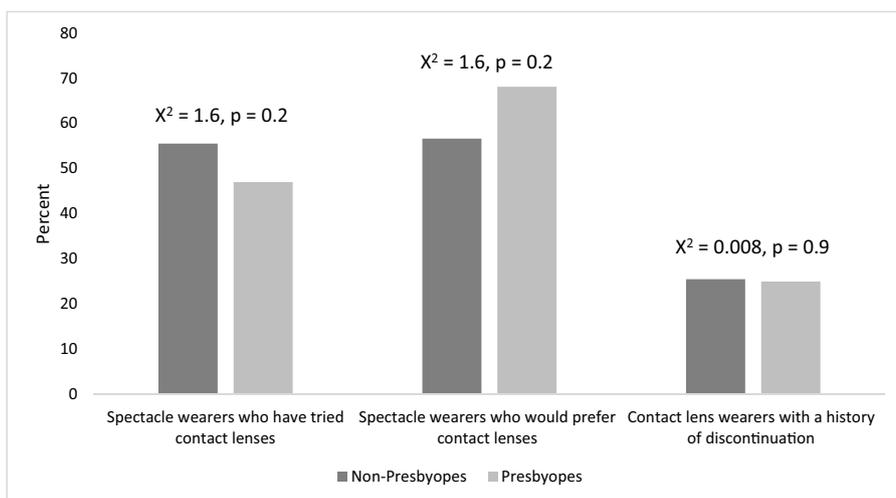


Fig. 1. Comparison of non-presbyopic (<40 years) and presbyopic (≥40 years) experience with and preference of spectacles and contact lenses. There was no difference between the percentage of presbyopes and non-presbyopes that had tried contact lenses. Of these spectacle wearers with a history of contact lens wear, there was no difference between the percentage of presbyopes and non-presbyopes that would prefer contact lenses. For subjects who wore contact lenses as their primary vision correction, there was no difference between the percentage of presbyopic and non-presbyopic contact lens wearers with a history of discontinuation.

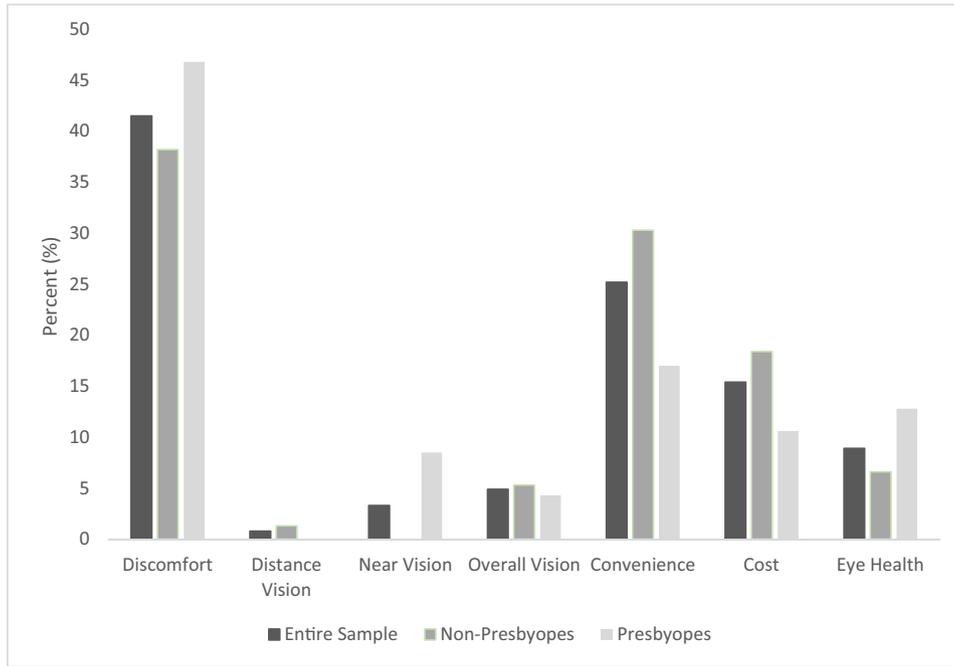


Fig. 2. Reason for contact lens discontinuation in spectacle wearers who reported previous contact lens wear (n = 123). There was no difference in the proportion of presbyopes (≥ 40 years) and non-presbyopes (< 40 years) who reported discomfort as their primary reason for discontinuation ($p = 0.3$, $X^2 = 0.9$). Statistical comparisons between other responses were not reliable due to the small number of subjects who reported the other reasons for discontinuation.

This proportion was not significantly different in non-presbyopic and presbyopic contact lens wearers. While discomfort was the primary reason for discontinuation in spectacle wearers who reported permanent contact lens discontinuation (Fig. 2), current contact lens wearers had more variable reasons for temporary discontinuation (Fig. 3). In the entire contact lens-wearing group, there was no substantial difference between discomfort, convenience, cost, and eye health for discontinuation. Vision (near, distance, or overall) was not reported as a reason for temporary discontinuation (Fig. 3). Presbyopes did seem to report eye health as a discontinuation reason more than non-presbyopes, but the sample size was very small (n = 4 presbyopes, n = 13 non-presbyopes), so these results may not represent the true population.

The reasons for contact lens discontinuation, continuation, and vision correction preference, when considered across the various groups in this sample allow us to make several important observations. Discomfort was the primary reason for permanent contact lens discontinuation in spectacle wearers, regardless of age group. A small percentage ($< 10\%$) of spectacle wearers cited vision as their primary reason for discontinuation (Fig. 2). When considering temporary discontinuation in current contact lens wearers, however, the primary reason for stopping lens wear was not as clear. While the groups were too small to reliably statistically analyze in Figs. 3 and 4, a visual comparison of temporary discontinuation reasons (Fig. 3) shows that, aside for eye health reasons for presbyopes, no single discontinuation reason stands out as the primary reason reported for the entire sample, or for the

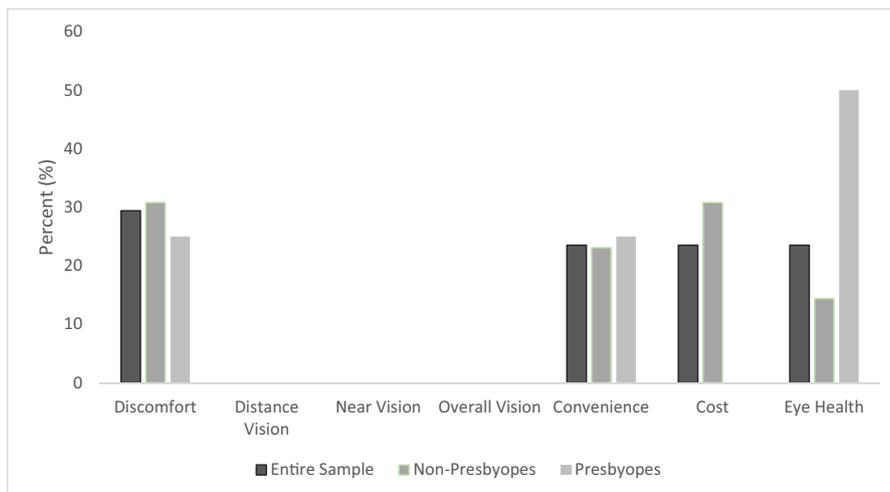


Fig. 3. Reason for temporary contact lens discontinuation in habitual contact lens wearers in the entire sample (n = 17), non-presbyopes (< 40 years)(n = 13), and presbyopes (≥ 40 years)(n = 4).

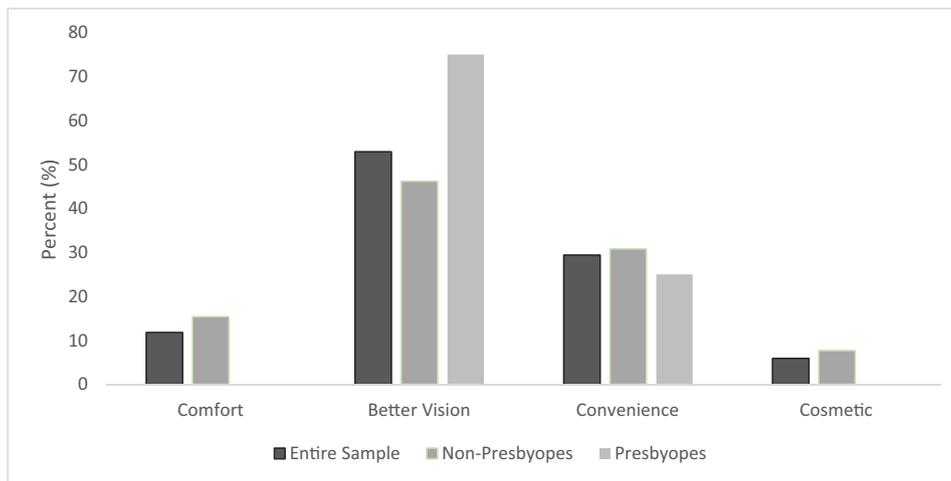


Fig. 4. Reason for resuming contact lens wear in habitual wearers who reported a period of discontinuation in the entire sample (n = 17), non-presbyopes (<40 years)(n = 13), and presbyopes (≥40 years)(n = 4).

non-presbyopic and presbyopic groups. While vision quality (near, distance, and overall) was never cited as a reason for temporary discontinuation, “better vision” was the main reason for resuming contact lens wear, and this reason may be higher in presbyopes compared to non-presbyopes. Considering the tendency of practitioners to assume that presbyopic contact lens wearers have worse vision in their contacts compared to their spectacles [3], this finding is particularly notable.

The results reflected in Figs. 2–4 show that discomfort is the primary reason for permanent discontinuation. Discomfort, therefore, should be addressed early in the fitting process to encourage long-term, successful contact lens wear, and research should continue to address treatments for contact lens discomfort. Improved visual quality with contact lens correction compared to spectacles can motivate temporary contact lens drop-outs to resume contact lens wear, regardless of presbyopic status. This finding may be especially important to eye care providers who assume that presbyopic patients dislike the vision with their contact lenses.

In conclusion, this study found that spectacle and contact lens wearers have similar opinions about contact lenses, regardless of if they are presbyopic or not. Spectacle wearers, in fact, would prefer to wear contact lenses if they could achieve good vision and comfort. While females were more likely to wear contact lenses, there was no gender difference amongst presbyopic and non-presbyopic contact lens wearers, suggesting that males and females are equally motivated to initiate and maintain contact lens wear, even as they progress into presbyopia. Presbyopes of all refractive errors, even those near emmetropia, prefer contact lens correction, when good vision and comfort can be achieved. Discomfort is the main factor contributing to contact lens discontinuation in all age groups, but the possibility of improved vision may be a primary motivator that causes a person to resume contact lens wear. When considering vision correction options, eye care providers should not assume that presbyopic status, refractive error, or gender are factors that preclude a patient from being interested in contact lens wear.

Conflicts of interest

None.

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