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QUALITY OF LIFE IN LASIK PATIENTS, AND PEOPLE USE SPECTACLES AND CONTACT LENSES FOR CORRECT THEIR REFRACTIVE ERRORS

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ABSTRACT

LASIK, spectacles and contact lenses are the ways that people choose to correct their refractive error. Nowadays, LASIK is the most technique that uses to correct refractive error. Some factors can affectpeople's choices, such as; cosmesis, having better visual spectrum, personality traits and psychological issues.

502 patients participated in this study. Patients divided in three groups (LASIK, spectacles wearer and contact lenses). 276 of sample were men and 244 of them were women. 266 persons were between 19-25 years, 114 persons were between 26-30 years, 100 persons were between 31-35 years and 40 of them were between 36-40 years. The IER (multidimensional quality of life scale) was used in this study for assessing of satisfaction, cosmesis, healthproneness, extra/introversion, tolerance of visual and ocular symptoms and frequency of visual and ocular symptoms.

There were significant differences between groups in all of subscales. Means of variables showed that LASIK patients after surgery indicated higher means in all of variables and CL group showed higher cosmesis perception than SCL group ($p<0.02$). Gender affected cosmesis ($p<0.02$) and healthproneness ($p<0.03$). All variables were significant different between ages.

This study showed that different ways to correct refractive error can affect people satisfaction, cosmesis, and psychological condition. Therefore, this study suggests that LASIK is most better way to correct refractive error.

INTRODUCTION

Refractive error affects 21 millions of Iran population (the Persian epoch times). People at first for correcting their refractive errors choice spectacles and contact lenses, during the past decade, refractive surgery has expanded among people that use spectacles and lens wearers [1, 2]. Laser in situ laser keratomileusis was performed in the early 1990s [3]. Refractive surgery is a technique that corrects myopia and myopic astigmatism [4]. In United States, about 1 million patients have lasik each year [5]. The efficacy and safety of LASIK have been reported by several studies [6,7].LASIKis one of the techniques that ophthalmic professions use in refractive surgeries [8].LASIK was mostly performed for low to high myopic correction [9, 10].

Some factors motivate patients to seek refractive surgery such as; cosmesis, having better visual spectrum [4]personality traits andpsychological. Some studies, also, showed that people who seek refractive surgery have tendencies to take risk [11, 12, 13]. These factors may affect quality of life [11]. Also, quality of life has both physical and psychological components [14]. Quality of vision problems after refractive surgery techniques such as LASIK have been reported in many studies [15, 16]. And despite the patients experiences dry eye, eye pain, halos, decreases in night vision acuity [14, 17, 18], choice refractive surgery rather than spectacles and lens contact.

Because many studies investigated about quality of life in LASIK patients but a few studies investigate psychological factors, personality traits and satisfaction differences between people that prefer LASIK and people prefer spectacles and contact lenses and in these a few studies, there were small samples. Because of this, this study aimed to explore differences in these factors between people prefer LASIK, and people use spectacles and contact lenses to correct refractive errors. Second aim is investigating about differences between genders and ages.

MATERIALS AND METHODS

This study was done in jawadAl-Aime eye clinic at Qom. This study was performed between October 2014 and January 2015 in patients that have myopic/myopic astigmatism. 206LASIKpatients who were enrolled to refractive surgery in this center

were selected. Inclusion criteria consisted of no lower than 1.00 diopters of spherical myopia, no lower than 1.00 of refractive astigmatism before operation, age between 19 to 40 years. People who wear spectacles were selected from other people. 212 people that use spectacles for correcting their refractive errors participated in this study. Finally, 102 people that use contact lenses for correcting their refractive errors were participated. Inclusion criteria were similar in SCL wearers and contact lenses. Myopic patients that candidate for LASIK with a mean spherical equivalent of – 3.41 D ±2.18 and SCL wearer people and contact lenses people with a mean spherical equivalent of -2.94±1.78 and -2.98±1.74 were participated in study. The mean age of 28±6 years old were selected.

For assessing of participants quality of life, the IER QOL (institute for eye research quality of life) scale was used. This scale assesses physical status, psychological state, personality traits and Cosmesis. Also, the scale assesses patient satisfaction with the current method for correcting myopia. Physical status are the questions that relates to visual and ocular symptoms that a patient experiences and their tolerance to these symptoms. Psychological state relates to patient adjusting to different situations and includes subjective well-being, self-efficacy and adaptability. Personality traits such as extraversion or introversion refer to a person's behavior. Cosmesis indicates that how a person believes the correction affects his/her attractiveness. Totally, the IER QOL scale has 5 subscales and a subscale that evaluates the patient satisfaction of their correction method (8 and 24 in 8). The physical status (visual and ocular symptoms, and frequencies) have 26 vision-oriented items (13 items for frequency and 13 for visual and ocular symptoms), psychological state has 10 items (health proneness questionnaire (HPQ), personality traits have three items that evaluate extraversion/introversion. In this study lower score in tolerance and frequency of disturbing visual and ocular symptoms subscales indicated poorer performance. The internal consistency with the Cronbach's α coefficient for subscales was 0.77 on Cosmesis, 0.80 on HPQ, and 0.73 on extraversion/introversion, 0.88 on tolerance and 0.88 on frequency. These results show that this scale has strong internal consistency [11].

LASIK patients three months after operation completed IER QOL scale and SCL wearers or contact lenses completed this scale and they didn't decide to have LASIK refractive surgery in future.

In this study for comparing of IER QOL subscales between groups, genders and ages, Multi Variable Analysis of Variance (MANOVA) was used. Descriptive statics was used for mean and standard deviation.

RESULTS

In this study 244 women and 276 men participated. 266 of them were between 19-25 years old, 114 of them were between 26-30 years, 100 were between 31-35 years and 40 samples were between 36-40 years.

Table 2 shows mean and standard deviation of IER QOL subscales between groups. Result shows that Satisfaction, cosmesis, visual symptom, and frequency of symptoms in SCL and CL groups are higher than in LASIK group before refractive surgery. Healthpronens and extra/introversion are higher in LASIK group than in SCL and CL groups.

Table 3 indicates that there is high correlation between variables. Correlation between visual symptoms and frequency of symptoms is high (0.83, $p<0.001$).

Table 4 showed that there are differences between groups. For example, the mean of visual symptom and tolerance in patients between 19-25 years was (32.74), between 26-30 years was (26.27), between 31-35 years was (25.73) and in patients between 36-40 years was (29.80).

Table 5 showed that there are differences in cosmesis and healthproneness between genders. The mean of cosmesis in men was (9.25) and in women was (7.32).

Table 6 shows tests of between subject effects. Results show that groups indicate significant differences in all subscales. Also, men and women show significant differences incosmesis and healthpronens. Finally, different ages show significant differences in all subscales.

Table 1: Demographics of patients included in this study (n= 520)

Group	**LASIK (206)**	**%39.7**
	SCL (212)	**%40.8**
	CL (102)	**%19.6**
Gender	**Men (276)**	**%53.1**
	Women (244)	**%46.9**
Ages	**19-25 (266)**	**%51.2**
	26-30 (114)	**%21.9**
	31-35 (100)	**%19.2**
	36-40 (40)	**%7.7**

Table 2: Mean and standard deviation of IER QOL subscales in three groups

variables	LASIK	SCL wearer	Contact lenses
Satisfaction	19.55±2.20	17.68±1.78	17.67±1.80
Cosmesis	11.88±2.10	8.03±2.36	9.10±2.31
Healthpronens	34.56±5.80	28.84±5.45	28.79±5.31
Extra/introversion	9.58±1.85	7.39±1.80	7.34±1.74
Visual symptom and tolerance	43.62±8.20	31.23±10.94	32.00±11.11
Frequency of symptoms	46.89±7.54	35.06±7.44	35.25±7.50

Table 3: Correlation between subscales of IER QOL

Variables	1	2	3	4	5	6
Satisfaction	1					
Cosmesis	0.52	1				
Healthpronens	0.48	0.40	1			
Extra/introversion	0.42	0.48	0.53	1		
Visual symptom and tolerance	0.64	0.35	0.37	0.53	1	
Frequency of symptoms	0.66	0.41	0.47	0.50	0.83	1

Table 4: Mean and standard deviation of IER QOL subscales in four age's group

Variables	19-25	26-30	31-35	36-40
Satisfaction	16.67(2.76)	14.71(2.91)	15.81(3.56)	13.77(2.94)
Cosmesis	7.65(2.19)	8.98(2.62)	9.41(2.16)	8.32(2.22)
Healthpronens	27.77(5.02)	30.93(5.12)	31.56(6.99)	28.45(5.10)
Extra/introversion	9.38(2.07)	7.95(1.55)	7.91(1.38)	8.10(2.06)
Visual symptom and tolerance	32.74(10.02)	26.27(10.20)	25.73(9.13)	29.80(9.61)
Frequency of symptoms	35.56(7.78)	31.31(7.65)	32.80(5.74)	31.57(7.20)

Table 5: Mean and standard deviation of IER QOL subscales in men and women

Variables	Men	Women
Satisfaction	17.95(2.78)	17.25(3.65)
Cosmesis	9.52(2.18)	7.32(2.87)
Healthproneness	32.78(5.50)	28.44(6.10)
Extra/introversion	7.93(2.25)	8.08(1.88)
Visual symptom and tolerance	35.72(8.25)	35.16(7.77)
Frequency of symptoms	37.22(6.28)	37.92(6.91)

Table 6: Tests of between subject effects

source	Dependent variables	df	Mean squares	f	p
group	Satisfaction	2	383.040	112.058	0.01
	Cosmesis	2	13.362	3.259	0.02
	Healthpronens	2	103.557	3.736	0.01
	Extra/introversion	2	5.243	1.592	0.03
	Visual symptoms	2	306.692	3.666	0.01
	Frequency of symptoms	2	512.502	10.065	0.01
gender	Satisfaction	1	3.045	0.891	0.34
	Cosmesis	1	1.946	0.470	0.03
	Healthpronens	1	83.410	3.009	0.02
	Extra/introversion	1	18.692	5.674	0.11
	Visual symptoms	1	191.588	2.290	0.13
	Frequency of symptoms	1	11.967	0.235	0.62
age	Satisfaction	3	7.935	2.321	0.03

	Cosmesis	**3**	**3.376**	**0.893**	**0.02**
	Healthpronens	**3**	**99.438**	**3.587**	**0.01**
	Extra/introversion	**3**	**1.555**	**0.560**	**0.02**
	Visual symptoms	**3**	**800.583**	**9.569**	**0.01**
	Frequency of symptoms	**3**	**265.589**	**5.216**	**0.01**

DISCUSSION AND CONCLUSION

Some studies showed that myopia was associated with some psychological effects such as introversion/extraversion, self-confidence, cosmesis, self-efficacy [19,11,4] This study showed that patients who undergone LASIK operation have higher satisfaction of their operation[15,4] and people who wearer spectacles and contact lenses didn't show significant differences between themselves. This result indicates that wearing spectacles and contact lenses can affect people satisfaction and therefore, LASIK can improve their satisfaction and can affect that they suggest to other people to have LASIK [20].

Cosmesis was the other factor that this study aimed to investigate. Three groups showed significant differences in this factor[11]. LASIK group showed higher cosmesis perception than other groups. This indicates that cosmesis is important factor for people to have LASIK[21]. SCL group had lower cosmesis than CL group. This result illustrates that people who wearer spectacles feel spectacles affect their cosmesis.

Self-efficacy, subjective well-being and adaptability(healthproneness) were other factors in this study. In these factors LASIK patients showed better healthproneness than other groups but SCL and CL groups didn't show any significant differences. Results demonstrate that LASIK can affect people self-efficacy, subjective well-being and adaptability.

Extra/introversion factor was significant different between groups. This showed social relationship and verbalization can affect in people that choice different way for correct refractive error. People who choice LASIK may be have more extraversion personality that makes them to have LASIK. About tolerance and frequency of visual and ocular symptom, results showed that people have LASIK indicated higher tolerance and low frequency of vision and ocular symptoms[6,22]. LASIK operation decreases this symptoms and frequency of them[1]. But there weren't any significant differences between SCL and CL groups. This demonstrated that spectacles or lenses have same result in correct refractive error.

In this study, second aim was investigating gender and age effect on quality of life of these people. Results showed that cosmesis and healthproneness (self-efficacy, subjective well-being and adabtibility) were different between genders. Women showed higher emphasis on their cosmesis because women who wearer spectacles showed lower cosmesis mean therefore, this indicate that people who have LASIK percept higher cosmesis and maybe cosmesis was the factor that makes people to have LASIK, and men indicated higher healthproneness mean than women. This demonstrates that genders can effects people self-efficacy, subjective well-being and adabtibility.

Ages was the next factor, all variables were affected by ages. In this study samples were divided into four groups. People who were between 19- 25 years showed better quality of life. They showed lower frequency and higher tolerance of vision and ocular symptoms. Cosmesis was more important factor to this group. Therefore, because of this many of samples that participated in this study were between 19-25 years. This group also showed higher mean in extra/introversion than other groups.

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