

# Awareness, Knowledge & Practice of Contact Lens Usage among Medical Students

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## ABSTRACT

**Background:** Medical students often use CL. For this reason, the researchers dealt with the awareness of the students of the Faculty of Medicine at KKU in KSA and extent of awareness and practice in use of CL.

**Objectives:** Address the important issue of use of CL and to identify the degree of awareness among students of the Faculty of Medicine at KKU in KSA and sought to highlight the importance of statistical analysis in reaching accurate and important results, also identify the most important indicators of the evolution of the health sector in Saudi Arabia.

**Subjects and Methods:** A cross-sectional study conducted in Asser region in KSA held during the period from March2017-Dec2017 carried out at 392 medical students. Study aiming to assess the Awareness knowledge & Practice of CL Usage among Medical students of College of Medicine, KKU and data were collected using special questionnaire.

**Results:** Study 392 students, both gender, almost 74% were females. 68% were suffering from eye diseases. Reason to use CL among participants were predominantly for cosmetics and soft CL were predominantly used by participants 91.4%. Variable knowledge level regarding the lifespan of CL types; soft, hard and gas permeable but the majority lacks the correct

information also lack the proper preservation and cleaning of CL. Although 44.6% were suffered previously from complications of CL, 41.8% remained using CL.

**Conclusion:** It's revealed students aren't encourage others to use CL as medical treatment compared to surgical and glasses. Social education is highly recommended for those users.

**Key words:** Awareness, Practice, Contact Lens, Medical Students, KSA, King Khalid University.

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## INTRODUCTION

Prevalence of contact focal point (CL) keeps on expanding with normal change in materials and variations appropriate for an assortment of users.<sup>1</sup> The perfect CL for refractive mistakes has demonstrated hard to discover with reports of difficulties with even the most exceptional frameworks available.<sup>2-4</sup>

Recent investigations have demonstrated the utilization of CL for refractive blunder remedy to be higher and more typical among the more youthful strata of population.<sup>5-7</sup>

Complications most ordinarily connected with utilize incorporate dry eye, goliath papillary conjunctivitis, corneal scraped area, corneal edema, corneal ulcer, keratitis and neovascularization.<sup>8</sup>

The attention to these inconveniences was discovered lacking among the more youthful clients and 87% of these clients favored CL use regardless of the visual issues identified with their use.<sup>9</sup> Cosmetic advantages and accommodation were the most widely recognized reasons referred to for CL use.<sup>10</sup>

Knowledge about utilize example would demonstrate helpful to general ophthalmologists and optometrists in directing youthful forthcoming clients in focal point sort, cleanliness and example of utilization.

The point of this examination was to discover an example of CL use among understudies with an emphasis on the method of reasoning for CL utilize and issues identified with their utilization.<sup>11</sup> Prevalence of contact uses in Saudi Arabia was studied previously.<sup>12</sup>

As well few studies were performed of wearing contact lens among medical students.<sup>13</sup>

## MATERIALS AND METHODS

The study was conducted in Asser region, southwestern Saudi Arabia. The population under study involved total of 392 students, 292 females (74.5%) and 100 males (25.5%).

The age group ranged between 18 to 30 years old. Special questionnaire was used to collect the required data.

**Data Collected**

The self-reported questionnaire filled by medical students was consisted of 32 questions. Six questions collected general information about marital status, educational level, occupation and any previous chronic diseases. The remaining 26 questioners talking about knowledge, practice, type of CL, lifespan of CL, organism and symptoms commonly causing by infections, possible complications and saline solutions of CL.

**RESULTS**

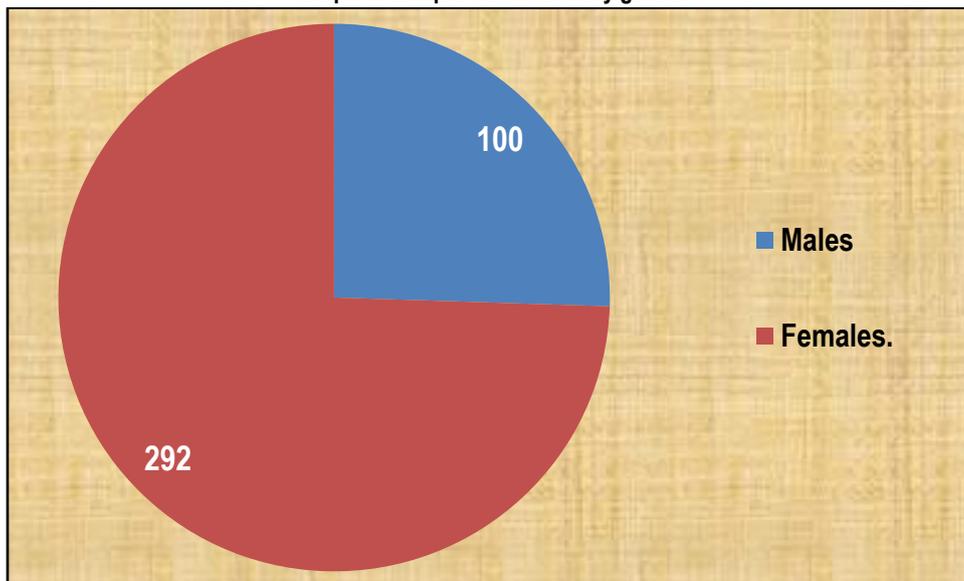
The study level of participants has ranged from level 3 students to internship. The least number of participants were in internship (1.5%) and the high number at level 3 (52%). Marital status involved; single (95.9%), married (3.9%) and separated (0.3%).

**Table 1: Students distribution according to academic levels**

Academic Level	No. of Students
3	52
4	43
5	31
6	30
7	42
8	39
9	19
10	38
11	41
12	26
Internship	25
Others	6

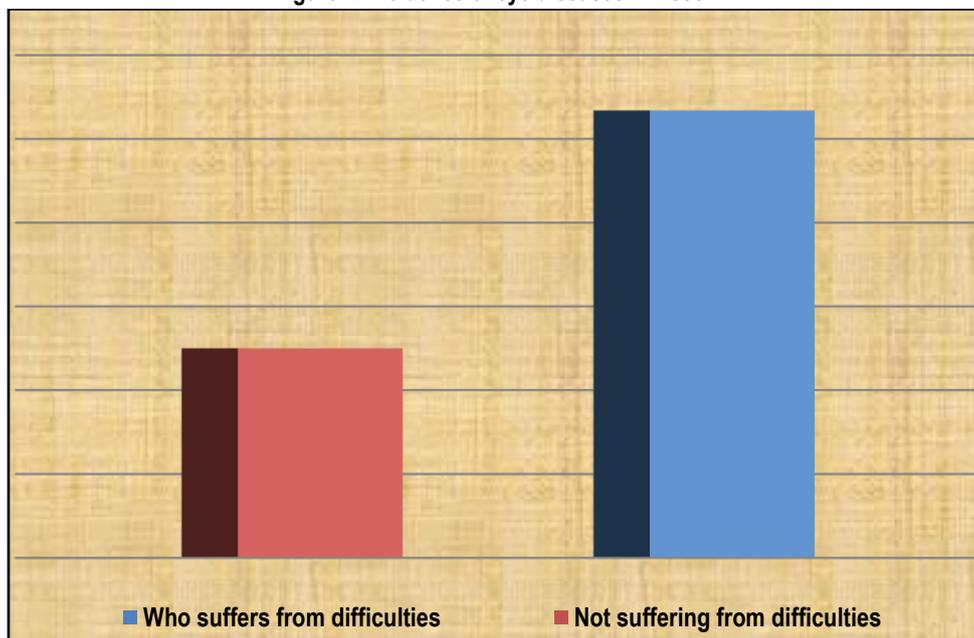
Source: Number of researchers based on study data.

**Graph 1: Sample distribution by gender**



Source: Number of researchers based on study data.

**Figure 2: Incidence of eye diseases in Asser.**



The previous health problems included the least one was food allergy (0.3%) and the highest were suffering no illness (68.1%). Suffering from eye diseases; the least was metropia (0.3%) while the greater were healthy (53.6%). Knowing about contact lenses were (0.5%) from other health workers and greatest came from family and relatives (29.3%). Reason to use contact lenses among participants were predominantly for cosmetics as shown in Graph (2). The soft contact lenses were predominantly used by participants (91.4%). The conventional contact lenses were predominant (91.6%). The duration for using the contact lenses varied; in 37.5% for less than 6 months and the least (13.3%) using for more than one year to two years. In (57.9%) used to wear lenses for less than 8 hours per day while only (0.3%) wear lenses for more than 12h/d for one day in (55.1%) and in (7.1%) for two weeks. In (89.8%) do not sleep with their contact lenses. Evaluation of students practice towards maintenance and cleaning of their lenses Table (2).

**Table 2: Evaluation of students practice towards maintenance and cleaning of their lenses.**

Practice	Frequency %
Replace with new contact lenses as instructed by manufacturer	56.1%
Washing contact lenses with water alone applied	48.7%
Washing contact lenses with water and soap	44.7%
Do not wash contact lenses	6.6%
clean their lenses with adherence to the manufacturer	56.6%
use the enzyme remove tablet once a weak as instructed	21.4%
Replacing of storage solution adopted	54.1%
Reuse and recycle of storage solution	31.6%
Never replace storage solution	14.3%
Using a prepared saline solution	61.7%
Using self-prepared saline	14.5%

**Table 3: Evaluation of Student Knowledge about their lens life span.**

Life span	Hard lens	Gas permeable lens	Soft lens
Days	13	58	129
Week	14	49	59
Month	8	42	136
Year	3	14	38
Not use	354	229	30

Choosing criteria of contact lenses varied but depending on comfort was applied by (64.3%) and (5.1%) depend on easy to maintain as the least criterion. At time of prescription (41.1%) were informed about complications of wearing of contact lenses and (24.5%) were not informed. The remain were not sure. (56.1%) were informed about the lifespan of their contact lenses, 22.5% were not the remain do not know. Assessing the participants knowledge regarding the lifespan of their hard contact lenses; (90.3%) they are not using, (0.8%) determine that the lifespan of their lenses remain for one year. knowledge regarding the lifespan of their gas permeable contact lenses; (58.4%) they

are not using, (3.6%) determine that the lifespan of their lenses remain for one year. knowledge regarding the lifespan of their soft contact lenses; (7.7%) they are not using, (34.7%) determine that the lifespan of their lenses remain for one year Table 3.

The overall knowledge assessment of contact lenses complications and infective organisms those highest number of participants who know were; 74.5% for corneal ulcer as complication and 53.6% *Pseudomonas aeruginosa* as infective organism. (44.6%) were suffered previously from complications of contact lenses. These complications were involving different types as shown on Table (4).

**Table 4: Complication of wearing contact lances among students**

Complication	Frequency	%
Dry eye	139	35.5
Pain in the eye	46	11.7
Gritty sensation	184	46.9
Red eye	92	32.5
Blurred vision	1	0.3

The highest one was gritty sensation in the eye (46.9 %) and the least one was blurred vision 0.3%. Assessing the participant's performance (attitude); (41.8%) they will use contact lenses after knowing their complications but less frequently while (40.3%) seek medical help when they experienced problem due to contact lenses. Consulting ophthalmologist is adopted by (75%) for medical help. (76%) of participants confess that they will advise their relatives and friend to undergo surgical operation for correction of refractive errors, (22.5%) advice wearing glasses and the least (1.5%) advice using contact lenses.

**Determinants of health sector growth in Saudi Arabia for the period 1995-2015.**

The sources and determinants of growth in the health sector in the Kingdom of Saudi Arabia are numerous and among the most important of these sources and determinants, government spending on the health sector, which is seen as the main motivation and driver of the health sector, where government spending is seen as the leader of growth and sustainability of the real economy, as These expenses are accompanied by an increase in the average per capita health expenditure. The number of families per thousand people has increased, and there is a strong and positive relationship between the sources of health sector growth and the growth of the Saudi economy, and the achievement of reasonable rates of economic and social development.

**Government Expenditure on the Health Sector:**

Government spending on the health sector increased markedly during the period 1995-2015, except in 1998 and 2015. The reasons for the decline in government spending on health in 1998 were due to the economic recession and the decline in the performance of the kingdom's economy, as a direct effect of the financial and economic crisis Which hit the markets of the emerging countries in Southeast Asia, which has been adversely affected by the performance of world economies in 1998, the reasons for the decline in 2015 came after the kingdom followed an austerity policy and reduced expenditure following a decline in

economic growth of 14 percent from 2014, after declining Oil prices in world markets are 48 percent, and this is the highest in the United Arab Kingdom, due to good government actions, the economy has recovered from the kingdom's vision of economic diversification as one of the key solutions to emerging crises, and the development of the health sector is considered to be within The kingdom's most important priorities for the year 2030.

**Per Capita Expenditure on Health:**

The Saudi Arabian share of government spending on health has evolved during the period 1995-2015. This demonstrates the wisdom and the manifestation of the Government of the Custodian of the Two Holy Mosques, as the increase in per capita health care has been reflected in visible improvements in the quality of life, and the rise of the life expectancy for life.

High per capita government expenditure contributes to the health sector. To grow and improve the quality of life, so that an individual enjoys a decent standard of health, and because of this the life expectancy levels of life are improving in the kingdom and reaching advanced stages worldwide.

Number of families in health centers and hospitals per 1,000 persons:

The increase in the number of families in the kingdom improves the quality of life and the improvement of the health situation, and therefore has positive repercussions on the economic and social level in Saudi Arabia.

**Average Life Expectancy:**

This indicator has grown and increased due to increased government spending, the increase in government expenditure

programmes on health has been accompanied by a clear improvement in life expectancy, with the average annual rate of 2015-1995 for the kingdom being about 73 years, thanks to the government's sense of the need to Hello Access to a healthy society this is reflected in the high priority of the health sector in the kingdom's vision 2030.

The importance of the health sector in Saudi Arabia can be highlighted as follows:

- Increasing overall productivity in the economy: an increase in gross domestic product (GDP).
- Increasing aggregate demand in the consumer and investment economy.
- Lower treatment costs, improved living standards.
- Access to healthy and safe societies.
- Low rates of unemployment among Saudi citizens.
- Decrease in the individual's access to health care
- Low poverty rates.

The average annual growth of government spending on the health sector was 8.2%. The average annual expenditure on real domestic output was 9 percent, which means that every increase in the kingdom's per capita health of 90 dollars will be accompanied by an increase in the gross domestic product (GDP) of 100 dollars.

Government spending on the health sector has positive repercussions on economic and social realities, providing health care for the citizen accompanied by increased welfare, tangible improvements in productivity, as well as reductions in poverty and social destitution.

**Table 5: Health sector indicators for the Kingdom of Saudi Arabia for the period 1995-2015**

Year	Direct personal expenditure on health as a proportion of total health expenditure (%)	Total expenditure on health as a proportion of output (%)	Per capita health expenditure (\$)	Life expectancy at birth (years)	Total family sector expenditure on health (\$ billion)	Total health expenditure (\$ billion)
1995	34.25	2.93	221.29	71.11	1.429	4.174
1996	32.06	2.93	239.01	71.44	1.481	4.621
1997	29.9	3.03	251.94	71.76	1.494	4.999
1998	29.72	3.31	237.86	72.05	1.433	4.824
1999	21.82	4.1	316.80	72.32	1.439	6.599
2000	18.46	4.24	373.09	72.56	1.474	7.989
2001	18.04	4.49	373.30	72.76	1.482	8.217
2002	18.63	4.28	356.18	72.92	1.503	8.069
2003	18.29	4.02	369.17	73.04	1.577	8.625
2004	18.15	3.58	385.49	73.13	1.681	9.262
2005	16.49	3.42	453.49	73.2	1.852	11.233
2006	15.7	3.55	526.31	73.27	2.100	13.379
2007	17.1	3.49	556.16	73.35	2.482	14.517
2008	20.05	2.87	557.87	73.44	2.991	14.918
2009	19.27	4.09	639.74	73.56	3.381	17.550
2010	19.84	3.49	655.07	73.7	3.647	18.385
2011	16.3	3.57	829.25	73.86	3.895	23.901
2012	15.81	3.86	961.34	74.04	4.479	28.330
2013	14.97	4.25	1052.10	74.22	4.735	31.634
2014	14.31	4.68	1147.45	74.4	5.048	35.279
2015	-	-	1251.45	74.57	-	-

Source: World Bank Database, Web site: <http://data.albankaldawli.org/><sup>(14)</sup>

**DISCUSSION**

The study found the number of results, and relevant and close relationship, between awareness among students and their use of contact lenses.

Consistent with previous studies, in the presence of the importance of using lenses and to medical students at King Khaled University in Asser.

Vary with the number of studies on the importance of eye surgery, The study also features the most important determinants of health sector growth in Saudi Arabia, and how the Government paid custodian in health sector development, building strong and Saudi human most productive. There is a close relationship between medicine and the use of contact lenses. Study shows female obsession to use lenses than males. While there are studies of male are increasingly used for lenses than females.

Search scored goals, and reached results confirm research hypotheses, where there is a relationship between the development of the health sector in the Kingdom and evolution using lenses. For the current study, the importance of research, the fact that it has touched on the use of contact lenses at medical school students, at King Khalid University in the Asser area.

There is awareness among medical students of the importance of using lenses; the study was studied with a deep analysis of study questions, where the SPSS program was used, with the aim of surveying 392 student and student views on the use of lenses.

The study found that 68% of students have illnesses in Laayoune and need to use lenses. That study agrees with previous studies in the importance of using lenses. What distinguishes this study is that it addresses the awareness of students of the Faculty of Medicine at King Khalid University in the Asser area of Saudi Arabia. The study of Abdel Rahman (2008) aims to identify some of the planning indicators to increase the effectiveness of the team, in providing integrated care for the visually impaired, in Assiut City, Arab Republic of Egypt. The study found that the wealth of any society depends not only on its natural resources, but also on human resources, and the existence of a healthy and healthy human being is the overarching goal of all Governments.

The study therefore considers that patients with eye diseases should be screened and used for lenses, and that it is necessary to provide integrated care for every person with vision difficulties.

The importance of using contact lenses in the treatment of keratoconic was addressed in the Attia study (2018).

The study found that Keratoconic is a disorder that infects the cornea in the eyes. The use of contact lenses is important in correcting the consideration, and the mainstay of the keratoconic treatment, where the use of the lenses has led to the healing of 90% of patients.

Addressed the Dear study (2017) preventing the formation of bacterial communities on soft contact lenses, the study aims to identify the types of germs that spread over contact lenses, and to achieve the search targets 184 samples were collected for people with difficulty in seeing and using lenses. The study found that 25% of the sample, suffered from bacteria on contact lenses.

A proper study (2017) dealt with the impact of the pressure resistance program for students of the Faculty of Medicine at Alexandria University on Mental health and academic performance of students.

The study found that medical students suffer from a variety of anxiety and disorders, and many of them still use the lenses, which are resistant to certain pressures.

The Faculty of Medicine and Health Sciences at the Palestinian University of Success (2015) addressed the importance of using contact lenses for medical school students.

The aim of the study was to raise awareness of the right way to wear contact lenses for med students. Students were made aware of the right way to use lenses, and to prevent complications such as feeding the corneal surface with oxygen, red eyes, and microbial disease caused by negligence in the use Lenses.

**CONCLUSION**

The awareness of knowledge, attitude and practice regarding using contact lenses should be evaluated among users to identify points of weakness and to construct a proper health education.

Vision difficulties in Saudi Arabia:

The vision difficulties are Saudi Arabia, one of the biggest difficulties facing Saudi citizen, with many difficulties in the year 2016, about 77189 people suffering from difficulties in vision, without the use of lenses, while the number of people suffering from difficulties in moving towards 128406, and the number of Persons involved in focusing difficulties statement about 16316, and people suffering from difficulties in communicating with other people, and hearing difficulties 19807 persons about 35390 people (General Statistics Authority, 2017).

**Table 6: preparing people with disabilities according to type of disability in the UK for the year 2016**

Motor difficulties.	Vision without glasses.	Difficulty in understanding and communicating with others	Difficulty of concentration and focus	Hearing	Type/class
98323	68741	17116	8308	27849	Trouble light
26786	6080	1349	1483	5999	Extremely difficult
3296	2368	1342	6525	1542	Very difficult (I can't)
128405	77189	19807	16316	35390	Total

Source: General Statistics Authority (2017), clear with a disability<sup>(15)</sup>.

Illustrated by figure (3) that the number of people suffering from difficulties in vision, and without using the lenses in 2016, about 77189 people, and stretched the difficulties as follows:

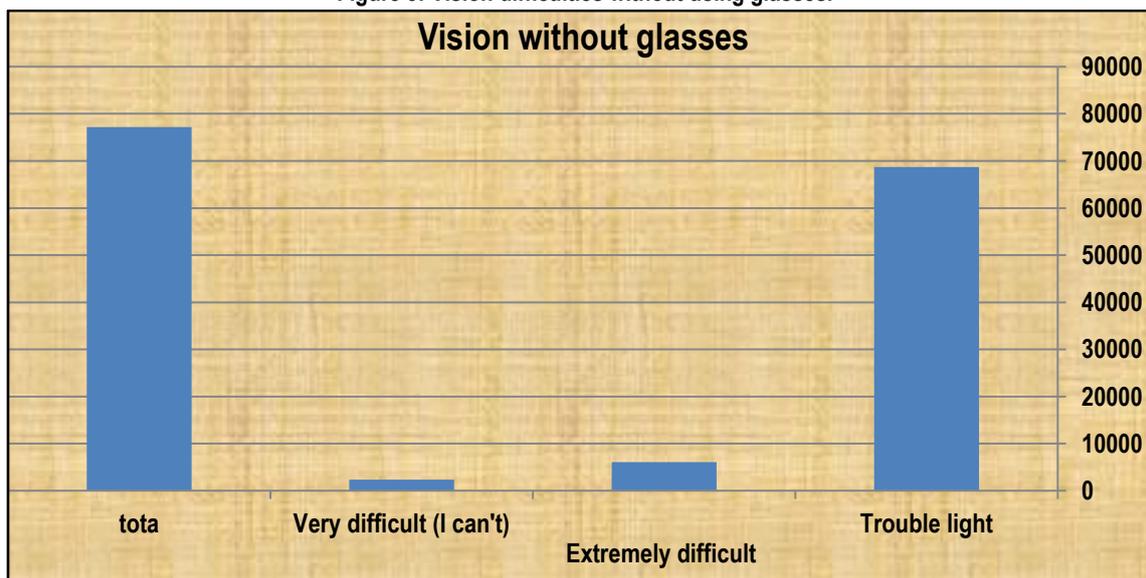
Slight difficulty: 68741

Difficulty: 6080

Very great difficulty, which I cannot see: 2368

Those numbers are low compared with the population of about 32 million adults Kingdom, due to the Kingdom's interest in developing health services (General Statistics Authority, 2017)

Figure 3: Vision difficulties without using glasses.



Source: General Statistics Authority (2017), clear with a disability.

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