

นิพนธ์ต้นฉบับ (Original article)

Knowledge, Attitude and Behavior Toward Utilization of Contact Lens Among First Year Students in Burapha University

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INTRODUCTION

A contact lens, or simply contact, is a thin lens placed directly on the surface of the eye. Contact lenses are considered as medical devices and use for visual correction or for cosmetic or therapeutic reasons. In 2004, it was estimated that 125 million people (2%) use contact lenses worldwide, including 28 to 38 million in the United States¹. At 2010, worldwide contact lens market was estimated at \$6.1 billion, while the U.S. soft lens market is estimated at \$2.1 billion. Some have estimated that the global market will reach \$11.7 billion by 2015². As of 2010, the average age of contact lens wearers globally was 31 years old and two thirds of wearers were female³. People choose to wear contact lenses for many reasons⁴. Aesthetics and cosmetics are often motivating factors for people who would like to avoid wearing glasses or change the appearance of their eyes. Other people wear contacts for more visual reasons. When compared with spectacles, contact lenses typically provide better peripheral vision, and do not collect moisture such as rain, snow, condensation, or sweat. This makes them ideal for sports and other outdoor activities. Contact lens wearers can also wear sunglasses, goggles, or other eyewear of their choice without having to fit them with prescription lenses or worry about compatibility with glasses. Additionally, there are conditions such as keratoconus and aniseikonia that are typically corrected better with contacts than with glasses.

It is essential that all contact lens wearers be made aware of the risks associated with contact lens wear-particularly those patients choosing the high-risk varieties such as extended-wear lenses for cosmetic optical correction purely on the grounds of convenience. All wearers must be under the regular care of a contact lens practitioner. Many of the chronic complications of contact lens wear are asymptomatic in their early and easily treated stages. Any contact lens should be removed immediately if the eye becomes uncomfortable or inflamed, and ophthalmic attention must be sought immediately if symptoms do not rapidly resolve. Except for daily disposables, contact lenses require regular cleaning and disinfecting, and particularly in the case of soft lenses, removal of protein deposits is required. Disinfection regimens include heat, chemical soaking, and hydrogen peroxide systems. All are effective if used according to the manufacturer's instructions, but some seem to be insufficiently effective against resistant organisms such as *Acanthamoeba* and *Fusarium*. For contact lens wearers who have developed hypersensitivity reactions to preservatives in their contact lens solutions, there are contact lens care systems that do not contain preservatives. It is important that such individuals are aware of the ability of organisms such as *Pseudomonas* and *Acanthamoeba* to survive in nonpreserved saline solutions. The use of non-preserved contact lens solutions requires much greater vigilance in the regular disinfection of lenses and lens storage cases.

Even with standard contact lens care systems, deposits in contact lens storage cases may prevent effective disinfection. Tap water, which may harbor organisms such as *Acanthamoeba*, should not be used for rinsing contact lenses or contact lens storage cases. Contact lenses should not be worn when bathing in a hot tub or swimming⁵.

The purpose of this study was to survey knowledge, attitude and behavior toward utilization of contact lens among first year undergraduate students in Burapha University, Chonburi, Thailand.

METHODS

Design and Sample

This was a cross-sectional descriptive survey.

The total 373 samples were obtained from 5,448 undergraduate students by using Taro Yamane formula. We stratified sampling from 18 faculties of Burapha University.

The data were collected from questionnaires which consisted of four parts:

Part I - Demographic data

Part II - Knowledge about contact lenses. The passing level was 80%.

Part III - Attitudes about contact lenses use. Both positive and negative attitudes were assessed by using rating scales. The score

between 3.00 - 5.00 was interpreted as having a positive attitude, while, the score between 1.00 - 2.99 was interpreted as having a negative attitude.

Part IV - Behaviors toward contact lenses use. Both positive and negative behaviors were assessed by rating scales. The score ranged between 3.00 - 5.00 was interpreted as having a positive behavior. The score ranged between 1.00 - 2.99 was interpreted as having a negative behaviors.

The Burapha University Ethics Committee for Research on Human Subjects approved the study number 38/2554

Statistical Analyses

The data was analyzed by using descriptive statistics, which comprised of frequency, percentage, mean, standard deviation (SD) and chi - square. Statistical significance was considered when the p-value ≤ 0.05 .

RESULTS

Part I Demographic Characteristics

Three hundred and thirty - three participants were recruited and forty participants were excluded because. The approximate female to male ratio was 3:1 (Table 1).

Table 1 Demographic data of the participants (N = 333)

Items	Number	%	Chi-square	P-value
Sex			79.40	< 0.001
Male	109	32.7		
Female	224	67.3		
Types of contact lenses used			174.00	< 0.001
Dairy	55	16.5		
Weekly	45	13.5		
Monthly	173	52.0		
Yearly	60	18.0		
The period of contact lens used per day			62.20	< 0.001
< 3 hours	37	11.1		
3-6 hours	93	27.9		
6-8 hours	126	37.8		
> 8 hours	76	22.8		
Cause of contact lens used			335.00	< 0.001
Correct vision problems	163	49.0		
Reinforce the personality	59	17.7		
In trend	45	13.5		
Convenient	34	10.2		
Recommendation from people you know	27	8.1		
From advertise or publish	5	1.5		
Purchased from			785.00	< 0.001
Glasses shop	210	63.1		
Department store	50	15.0		
Online shopping	21	6.3		
Drugstore	20	6.0		
Weekend market	17	5.1		
Catalogs in magazine	8	2.4		
Beauty shop	7	2.1		
Big eye contact lens used			7.36	< 0.001
Yes	149	44.7		
No	184	55.3		

The participants's mean age was 18.93 (S.D. = 0.93) years. Average income was 6,074.70 (S.D. = 2,875.70) Baht. In Table 1, the statistically significant differences were detected in all items.

Part II Knowledge about contact lens use

Table 2 Knowledge about contact lens use

Knowledge evaluation	Number	%
Passed	113	33.9
Not passed	220	66.1
Total	333	100.0

Table 2 shows that most of the participants (66.1%) did not pass the knowledge evaluation about contact lens use.

Part III The attitude about contact lens use

Table 3 The attitude about contact lens use

Items	Level					\bar{X}	S.D.
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree		
Self-confident	3 (0.9%)	5 (1.5%)	74 (22.2%)	125 (37.5%)	126 (37.8%)	1.90	0.86
Refractive-error solving	105 (31.5%)	131 (39.3%)	83 (24.9%)	10 (3.0%)	4 (1.2%)	3.97	0.89
Fashionable	60 (18.0%)	75 (22.5%)	107 (32.1%)	53 (15.9%)	38 (11.4%)	3.20	1.24
Increased costs	7 (2.1%)	16 (4.8%)	76 (22.8%)	124 (37.2%)	110 (33.0%)	2.06	0.97
Branded independent	50 (15.0%)	78 (23.4%)	99 (29.7%)	60 (18.0%)	46 (13.8%)	3.07	1.25
Outdated characters	82 (24.6%)	74 (22.2%)	85 (25.5%)	63 (18.9%)	29 (8.7%)	3.35	1.27
FDA approval	196 (58.8%)	89 (26.7%)	40 (12.0%)	5 (1.5%)	3 (0.9%)	4.41	0.83
Overall mean score						3.14	1.04

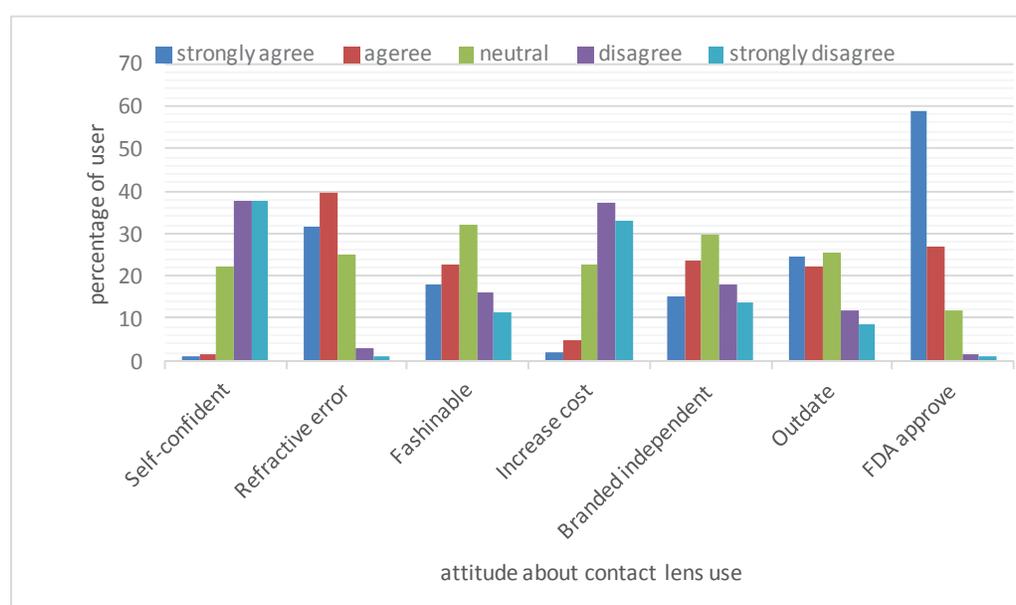


Figure I The attitude about contact lens use

Table 3 and Figure I show that an overall attitude about contact lens used were positive (Mean = 3.14, S.D. = 1.04).

Part IV Behaviors toward contact lenses usage.

The relationship between knowledge and correctness behaviors of contact lens use are shown in table 4 and 5 respectively. Most of the participants (81.4%) had incorrect behaviors about contact lens use. There was no significant difference between knowledge and behavior among contact lenses users.

Table 4 The correctness of the behavior of contact lens use

Behavior	Number	Percent
Correct	62	18.6
Incorrect	271	81.4

Table 5 Relationship between Knowledge and Behavior

Knowledge	Behavior		Chi-square	P-value
	Correct	Incorrect		
Passed	26	87	2.18	0.14
Not passed	36	184		

DISCUSSIONS

Most of the participants were female. This was consistent with the research of Tajunisah I, et al which was showed that female medical students of Malaya University were caring and sensitive in the use and care of contact lenses more than men⁶. It was also consistent with the cross - sectional survey of Lee YC, et al., which was found that most of contact lens used in an electoral community in Singapore was Chinese girls with higher education and income⁷. We found that participants who wear contact lenses have moderately high income (average 6,074 Baht per month). There fore, most of them used monthly contact lenses. In addition, the study of Vidotti VG in the University of Estadual Paulista, Botucatu found that most of the medical students also used monthly contact lenses⁸. This study showed that most of participants spent 6 - 8 hours a day to wear contact lenses, however, Tim Bowden's found that the users usually use 10-12 hours per day. This probably because there were social and cultural differences and also different types of lenses between the countries⁹. In other words, it is possible that university under graduate students follow the manufacturer's recommendation that contact lenses should not use more than 8 - 10 hours. We found that most of the participants started using contact lenses for correcting vision problems. It contrasts with many studies. Tajunisah I found that the main reason for using the contact lenses was for beauty. The study by

Saw SM in Singapore found that the majority of user use contact lenses for both comfort and beauty⁷. Unnikrishnan B and Hussain S in Eagan reported that the college students in the state of Karnataka, India wear contact lenses because of comfortable (61%) and favoring to buy contact lenses from the optician¹⁰. Most of the participants in this study bought contact lens from both optician and pharmacy.

This study found that most of the participants were not passed knowledge evaluation. There are many previous researches about the relationship between knowledge and attitude, the relationship between knowledge and behavior. Our study found that participants' positive attitudes support the ideas that contact lenses should be used in people who have vision problems. This is consistent with research of Zeri F and Livi S¹¹, the Food and Drug Administration (FDA) guide that the use of contact lenses was to correct the refractive error. In this study, participants agreed that there are no different between the brands of lenses. The study of Bowden T also claimed that the majority of participants do not know the brandname of contact lenses that they use. It implies that contact lenses users has no idea about the quality of different brands of contact lenses. The participants in our study bought the big eye contact lenses which was approved by The Thai FDA. There area label of medical license number on the containers or packages.

The negative attitude of the participants found that wearing contact lens should be the

popular fashion. Zeri F. also found that the purpose of using contact lenses for improving adolescent significant when compared with other ages. However, half of the parents, especially the mothers do not encourage their children to wear contact lenses because they concern about contact lens care. It is possible that young adolescent participants in Thailand with average age of 18 – 19 years, still received care closely from their parents. Thus, decision making is also often required parents to get involved. The participant teenagers were interested in wearing contact lens, therefore, social factors such as family, close friends or their favorite celebrities are involved in the decision making, both directly and indirectly. The results of this study showed that the attitudes of participants who wearing contact lenses were not associated with the knowledge about the use of contact lenses.

To prevent eyes damage, the majority of participants follows the manufacturer's instructions and recommendations of using contact lenses carefully, such as washing hands thoroughly before touching the surface of the lens while wearing contact lenses, tend to avoid the pollutant areas such as dust, smoke or heat. This is consistent with the research of Bui TH, et al at the department of ophthalmology, medical center university of Texas, USA which was found that the patients who used contact lenses were aware of the risks in the use of contact lenses, never the less, awareness was not enough¹². Most of the participants in this study had changed

the lenses on a regular basis. They rejected using the plain tap water to clean contact lenses. This is consistent with the research of de Oliveira PR, Faculty of Medicine, University of Sao Paulo, Brazil which evaluated college students and health care personnel who used contact lenses. Most of them followed the instructions, including removal of contact lenses before sleeping, swimming and take a bath/shower. Besides, carefully self-monitoring to prevent eyes damage from using contact lens, the eyes examination by ophthalmologist is considered to prevent harm¹³.

In summary, this study found that participants have good attitudes. They do not have enough qualification of knowledge nor correct behaviors of contact lenses used. Therefore, education and behaviors changed are needed.

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