International Journal of Research
Available at https://edupediapublications.org/journals
e-ISSN: 2348-6848
p-ISSN: 2348-795X
Volume 05 Issue 12
April 2018

Frequency of Myopia and underlying factors of Myopia among 4th year Medical Students in Nishtar Medical University Multan

1st Dr. Uzair Tariq [1] 2nd Dr. Hira Khurshid [2] 3rd Dr. Ammar Yasin [3]

Abstract:

Growing levels of high Myopia are increasing the risks of serious eye conditions which may lead to permanent blindness. A number of evaluations (at small and large scale) regarding Myopia have been carried out but very few of them reflect the opinions about medical students.

Key words

Key words are 4th year MBBS students Myopia, study hours, family history.

Objectives of the study

To determine the frequency of myopia and underlying factors among 4th year students of MBBS at NMU, Multan.

Material and Methodology

A total of 100 students were included in study with their informed consent. A questionnaire was designed data was collected and analysed using SPSS and Microsoft excel. Type of study was cross sectional and type of sampling was Non Probability Convenient.

Result

The mean age of 4th year students was 22 years. Out of total 100 students, 68% were myopic. 5.9% were in the age group of 18-20 years, 83.8% in 21-23 years and 10.3% were 24-26 years of age. 66.2 % students were females. Family history of myopia was positive in 73.5% students. Genetic history of myopia is positive in 66.2%. The study hours of 19.2% students were ≤ 2 hour, 2-8 hours in 66.2% and > 8 hours per day in 11%. The duration of TV watching was <2 hour per day in 27.9% students, 2-4 hours in 41.2% and > 4 hours in 30.9% children.16.2 % of the students were spending their time on smart phones for <2 hour, 58.5% for 2-4 hours and 25% for > 4 hours. 8.8% students have less than 6 hours sleeping time, 64.7% students who sleep 6 to 8 hours and 26.5% more than 8 hours.

Conclusion

From our study we concluded that Myopia is affecting majority of 4th year MBBS students. There is strong association of myopia with near work and with family and genetic history of myopia.

1. Introduction

Refractive error may be defined as a state in which the optical system of the non-accommodating eye fails to bring parallel rays of light to focus on the retina. Especially myopia has become a very common problem. Myopia is a refractive error in which eye fails to see distant objects properly. It has become an ocular disorder of major public health and socioeconomic significance throughout the world. Several studies describe an increasing prevalence of myopia in the recent years. There has long been a concern that blindness and visual impairment from myopia will lead to major public health problems for many countries in Asia. Although blindness registry data indicate that myopia is the fourth leading cause of blindness in Myopia (short- or near-sightedness) affects many school-aged children and is fast becoming a major public health issue of our time. It is estimated that the current number of 2 billion people (2010) with the condition will grow to a staggering 2.6 billion by 2020 and 4.8 billion by 2050.[1]

The onset of myopia at an early age brings with it the likelihood of life-long eye care, there is a significantly increased risk of serious ocular health problems with high myopia, which can lead to vision loss and blindness. It is projected that almost 1 billion people will have high myopia by 2050.[1]
Medical education imposes significant stress on medical students mainly through time pressure large amount of new information, excessive study hours, less sleeping hours and other problems. A considerable degree of Myopia has been reported in medical students ranging from excessive study hours to less sleeping

hours and other extended near vision tasks coupled with a genetic predisposition for Myopia. This is a need to explore Myopia among medical students. Several studies suggest a high prevalence of Myopia among medical students with level of near sightedness consistently higher than in the general population and age matched peers. In fact, a recent study by National Eye Institute (NEI) shows the prevalence of Myopia grew from 25 percent of the US Population (ages 12-54) in 1971-1972 to a whopping 41.6 percent in 1999-2004. Similarly in Norway Medical Students (University of Trondheim), of 133 (75 females, 58 males), 50.3% were found to be myopic.

2. Objectives

1. To determine the frequency of Myopia among 4th year medical students in NMU, Multan.
2. To determine the underlying factor of Myopia among the students.
3. To assess the prevalence of Myopia between the two genders.
4. To assess the prevalence of Myopia among the students of different age groups.
5. To assess the prevalence of Myopia among the students having different genetic and family histories.
6. To assess the prevalence of Myopia among the students having different study and sleeping hours.

3. Material and methodology

A **Descriptive cross-sectional study** was done at **NISHTAR Medical University** Multan. 100 students from 4th year MBBS were included in the study. Data was collected using **Non Probability Convenient sampling.**

Questionnaire revealed various **demographic variables** like Age, Gender of the students and Residence. And various other variables suspected to be the underlying factors in causing myopia for example Study hours, sleeping hours, eye exercises, watching TV, using smart phones etc.

Inclusion Criterion: 4th year MBBS students**.**

Exclusion Criterion: Students not from 4th year MBBS.

Data was collected from 27th April 2017 to 8th May 2017 and was analyzed in the department of **Community Medicine** using **IBM SPSS** (statistical package for social services) v.20. And compiling was done using **MS OFFICE 2013.**

4. Results

Table 1. Age distribution of students of 4th year MBBS

n=100

Age group	Frequency	Percentage
18-20	7	7
21-23	81	81
24-26	12	12

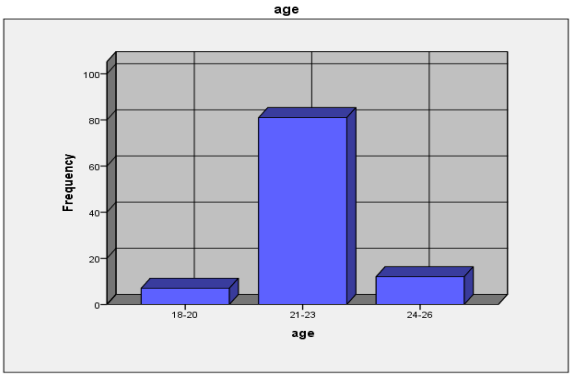

Figure 1. Age distribution of students of 4th year MBBS

Table 2. Gender distribution of 4th year MBBS

n=100

Gender	Frequency	Percentage
Male	37	37
Female	63	63

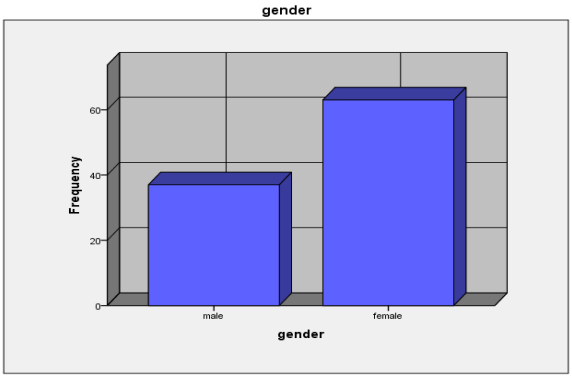

Figure 2. Gender distribution of 4th year MBBS

International Journal of Research
Available at https://edupediapublications.org/journals
e-ISSN: 2348-6848
p-ISSN: 2348-795X
Volume 05 Issue 12
April 2018

Table 3. Frequency distribution of Myopia among 4th year MBBS students

n=100

History of Myopia	Frequency	Percentage
Yes	68	68
No	32	32

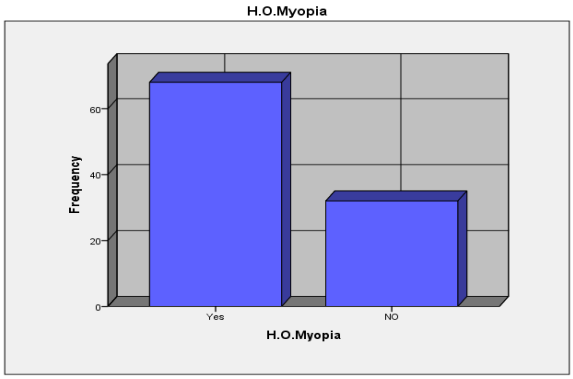

Figure 3. Frequency distribution of Myopia among 4th year MBBS students

Table 4. Frequency distribution of Myopia among to different age groups

n=100

History of Myopia	Age			Total
	18-20	21-23	24-26	
Yes	4	57	7	68
NO	3	24	5	32
Total	7	81	12	100

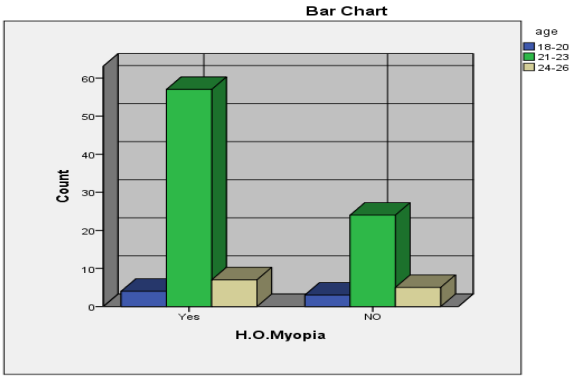

Figure 4. Frequency distribution of Myopia among to different age groups

Table 5. History of myopia according to gender distribution

History of Myopia	Gender		Total
	Male	Female	
Yes	23	45	68
NO	14	18	32
Total	37	63	100

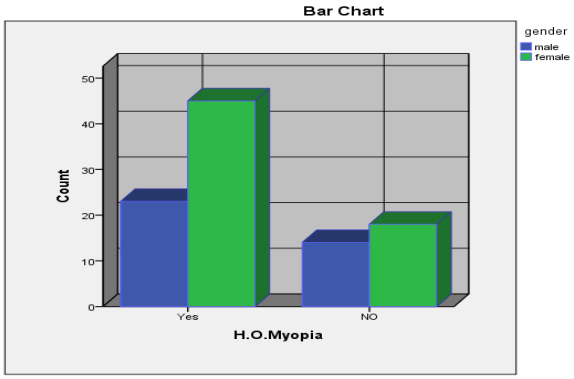

Figure 5. History of myopia according to gender distribution

Table 6. Frequency distribution of Myopia among students according to their Residence

n=100

History of Myopia	Residence		Total
	Day scholar	boarder	
Yes	33	35	68
NO	14	18	32
Total	47	53	100

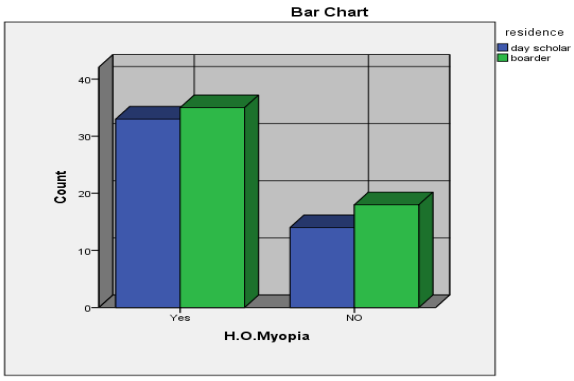

Figure 6. Frequency distribution of Myopia among students according to their Residence

Table 7. History of myopia among the students according to genetic history

n=100

History of Myopia	Genetic History					
	1 Parent		2 Parent		None	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	22	32.4%	23	33.8	23	33.8
NO	9	28.1%	4	12.5	19	59.4
Total	31	31%	27	27%	42	42%

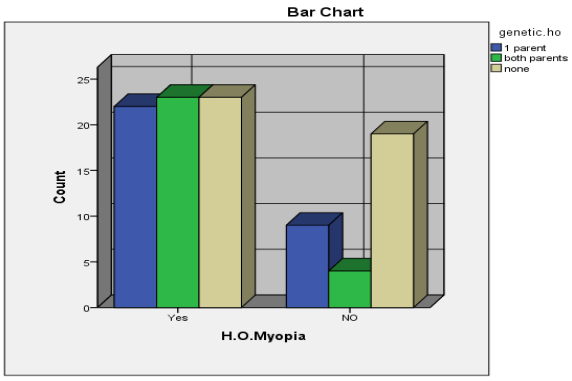

Figure 7. History of myopia among the students according to genetic history

Table 8. History of Myopia among the students according to Family history

n=100

History of Myopia	Family History							
	Sibling		Grand parents		None		Both	
	Frequency	%age	Frequency	%age	Frequency	%age	Frequency	%age
Yes	34	50%	10	14.7 %	18	26.5 %	6	8.8%
NO	7	21.9%	5	15.6 %	18	56.2 %	2	6.2%
Total	41	41%	15	15%	36	36%	8	8%

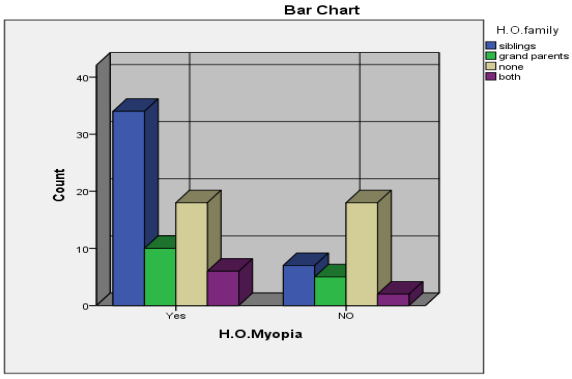

Figure 8. History of Myopia among the students according to Family history

Table 9. History of myopia among the students according to study hours

n=100

History of Myopia	Study hours					
	Less than 2 hours		2 to 8 hours		More than 8 hours	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	13	19.1%	45	66.2%	10	11%
NO	10	31.2%	21	65.6%	1	3.1%
Total	23	23%	66	66%	11	14.7%

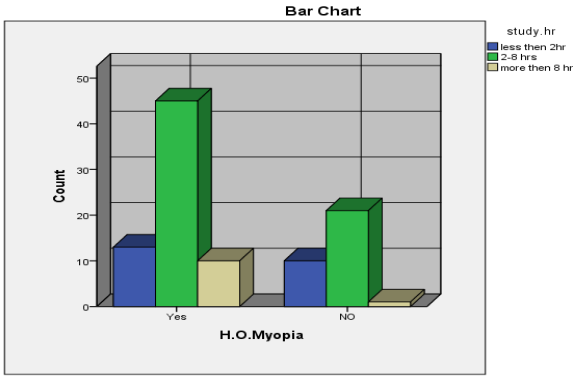

Figure 9. History of myopia among the students according to study hours

Table 10. History of myopia among the students according to Time spent in front of Display screen (laptop/pc/TV)

n=100

History of Myopia	Time Spent					
	Less than 2 hours		2 to 4 hours		More then 4 hours	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	19	27.9%	28	41.2%	21	30.9%
NO	11	34.4%	12	37.5%	9	28.1%
Total	30	30%	40	40%	30	30%

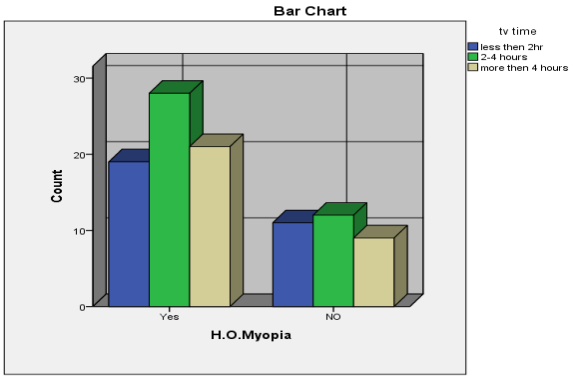

Figure 10. History of myopia among the students according to Time spent in front of Display screen (laptop/pc/TV)

Table 11. History of myopia among the students according to Time spent on smart phone

n=100

History of Myopia	Time Spent (TV)					
	Less than 2 hours		2 to 4 hours		More than 4 hours	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	11	16.2%	40	58.8%	17	25%
NO	5	15.6%	18	56.2%	9	28.1%
Total	16	16%	58	58%	26	26%

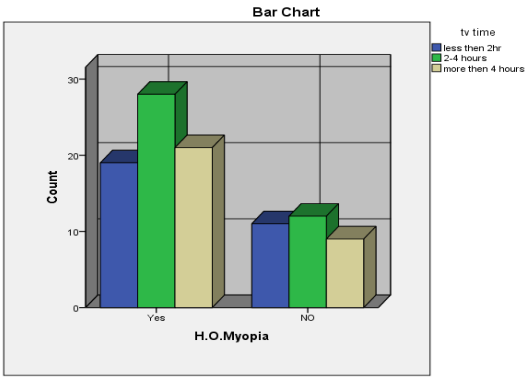

Figure 11. History of myopia among the students according to Time spent on smart phone

Table 12. History of myopia among the students according to Sleeping hours

n=100

History of Myopia	Time Spent in sleeping					
	Less than 6 hours		6 to 8 hours		More than 8 hours	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	6	8.8%	44	64.7%	18	26.5%
NO	7	21.9%	21	65.6%	4	12.5%
Total	13	13%	65	65%	22	22%

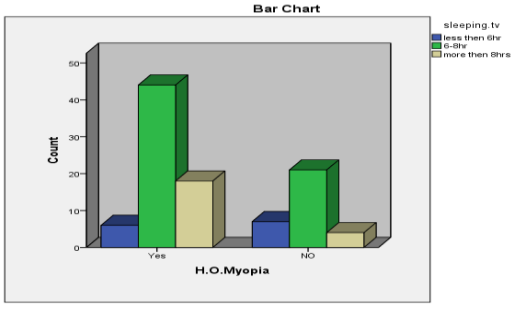

Figure 12. History of myopia among the students according to Sleeping hours

Table 13. History of myopia among the students according to Eye exercise

n=100

History of Myopia	Eye exercise					
	Regular		Irregular		No Exercise	
	Frequency	%age	Frequency	%age	Frequency	%age
Yes	8	11.8%	4	5.9%	56	82.4%
NO	0	0%	0	0%	32	100%
Total	8	8%	4	4%	88	88%

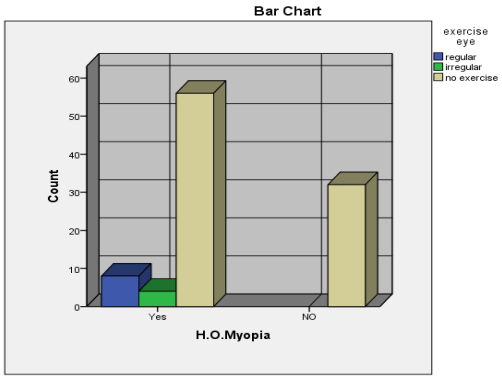

Figure 13. History of myopia among the students according to Eye exercise

Table 14. History of myopia among the students according to use of eye drops

n=100

History of Myopia	Use of Eye drops			
	Regular		Irregular	
	Frequency	%age	Frequency	%age
Yes	14	20.6%	54	79.4%
NO	2	6.2%	30	93.8%
Total	16	16%	84	84%

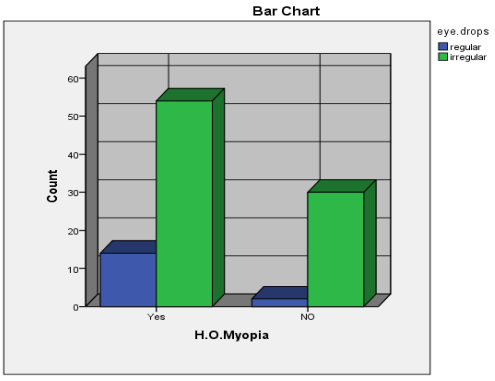

Figure 14. History of myopia among the students according to use of eye drops

Table 15. History of myopia among the students according to rubbing of eyes

n=100

History of Myopia	Rubbing of eyes			
	Yes		No	
	Frequency	%age	Frequency	%age
Yes	41	60.3%	27	39.7%
NO	21	65.6%	11	34.4%
Total	62	62%	38	38%

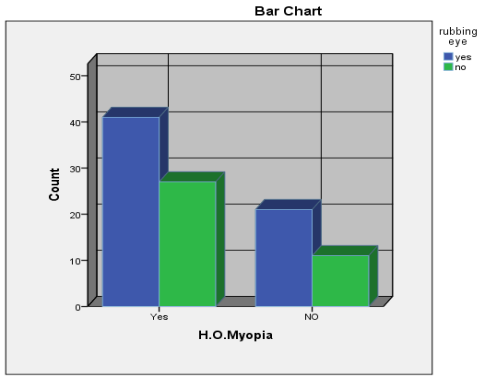

Figure 15. History of myopia among the students according to rubbing of eyes

5. Discussion

According to the report by World Health Organization, uncorrected refractive error is the second commonest cause of global visual impairment next only to cataract.[1]In this study, high prevalence of myopia was found among the medical student which was in agreement with the study conducted by Sood et al.[2]Similar to our findings, Chalasani et al. also observed that the number of myopic was found to be increased among the student taking admission in the medical college every year.[3]

In our study, out of 100 students myopia was 68% and 32% were emmetropes. Majority of students were in the age group of 21-23 years i.e. 83.8% and only 5.9% were 18-20 years , 10.3 % werein24 to 26 years Frequency of myopia in our study was similar to myopia in the study conducted by Chaudhary et al, in which it was 57.6%.[4] And 63% of the students in our RESULTS study were females while only 37% were male There were a total of 100 students in the study. And frequency of myopia among females was higher Frequency of myopia was 66.2% and 33.8% as compared to male, which is consistent to the study conducted by Mavracanas TA et al, which reported 67.37% students were female as compared to 32.63% males[5] . Our study results revealed significant association of Family history of myopia was positive in 73.5% myopia with family history. And genetic history in 66.2% . Similarly in study conducted by yingyong P parents with myopia tends to have children with myopia.[6]

It was observed in our study that myopia is also highly associated with use of electronic gadgets such as smart phones and computers. This observation was in agreement with the findings of Reddy et al. who found that more than 2 hours continuous use of computer was significantly associated with occurrence of symptoms of computer vision syndrome.[7] Our results in this regard is also consistent with another study suggesting that prolonged use of computers is responsible for visual fatigue which in turn may lead to myopia.[8]

According to David Allam by, Founder of Focus Clinics, there has been a 35 per cent increase in the number of people with advancing myopia (short sightedness) since the launch of smart phones in 1997.[9]Our study proposed the higher incidence of myopia among smart phone users as also suggested by Lee H et al.[10]

6. Conclusion

High prevalence of myopia was found among the medical students. The increased applicability of electronic gadgets, laptops, computers and smart phones were found to be the major associated risk factors along with the family history and genetic history. Further studies are recommended for the prevention of increasing frequency of myopia among the young population.

7. Limitations

A very limited research has been done regarding prevalence of myopia among the 4th year MBBS students of Nishtar Medical University.

1. Our sample size was very small consisting of 100 students.
2. We used non-probability convenience sampling to draw our sample; this method is inferior to probability sampling in representation of the population and this limits the validity of the study
3. Degree of generalizability is questionable.
4. Difficulties in estimating sampling variability and identifying possible bias.
5. Prospective longitudinal studies are needed to establish causal relationship between near work and myopia in the medical students.

8. Recommendations

First of all need to identify the population at risk and myopic by screening and proper evaluation of those with any difficulty seeing distant objects clearly such as the TV or the writing on the board. Prescribing correct (concave) glasses to individual suffering from myopia. And health education of general population and high risk population regarding the underlying factors causing myopia and prevention

Whenever close work is done

1. Hold the work as far away as possible.
2. Use as much light as possible in order to reduce the size of the pupil and, consequently, the accommodation.
3. Look into the distance frequently to relax the accommodation.

If symptoms are worsening then consult ophthalmologist for proper evaluation as there are

number of visual threatening complication associated with myopia.

References

[1] Gopalakrishnan S, Prakash MVS, Kumar R. A Study of Refractive Errors among Medical students in AIMST University, Malaysia. Indian MedJ. 2011;105(11):365.

[2] Sood RS, Sood A. Prevalence of myopia among the medical students in western India vis-à-vis the East Asian epidemic. IOSR JDent Med Sci. 2014;13(1):65-67.

[3] Chalasani S, Jampala VK, Nayak P. Myopia among Medical Students-A Cross Sectional Study in A South Indian Medical College.Al Ameen J Med Sci. 2012;5(3):233-242.

[4] Chaudhary R, Ali H, Sheikh HN. Frequency and Ophthalmology outpatient department, it may not underlying factors of myopia among medical students. be possible to generalize the results to the whole Biomedica. 2011;27(2):154-60.

[5] Mavracanas TA, Mandalos A, Peios D, Golias V, needed to establish causal relationship between Megalou K, Gregoriadou A, et al. Prevalence of myopia in a sample of Greek students. Acta Ophthalmol Scand near work and myopia in this age group. 2009;78(6):656-59.

[6] Yingyong P. Risk factors for refractive errors in primary school children (6-12 years old) in Nakhon Pathom Province. J Med assoc. 2010;93(11):1288-93.

[7] Reddy SC, Low CK, Lim YP, Low LL, Mardina F, Nursaleha MP. Computer vision syndrome: a study of knowledge and practices in university students. Nepal J Ophthalmol. 2013;5(10):161-168. DOI:10.3126/nepjoph.v5i2.8707.

[8] Rajeev A, Gupta A, Sharma M. Visual Fatigue and Computer Use Among College Students. Indian JCommunity Med. 2006;31(3):192-193.

[9] Nnes E. Have you got 'screen sightedness'?- Smartphones are causing sight problems to soar, warns eye surgeon, "Dailymail", United Kingdom, 2013, August 15. (http:// www.dailymail.co.uk/health/article-2394611)

[10] Hosub L, Sunjae L, Young Sang C, Seo Y, Shim E. A new posture monitoring system for preventing physical illness of smartphone users. Consumer Communications and Networking Conference (CCNC), 2013 IEEE: 821-825.DOI:10.1109/ CCNC.2013.6488555.