Determinants of Impaired Visual Acuity

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Objectives: To determine the association between impaired vision and its psychosocial factors.
Design: It is population based case control study.
Subjects and methods: Fifty cases were randomly selected from adult population excluding persons having cataract. Fifty controls were selected after matching. A pre-tested questionnaire formatted and distributed. Data was collected, compiled and analysed through SPSS to determine the association.
Result: Lack of exercise (OR 0.352.CI 0.156-0.795) and excessive exposure to fumes (OR 0.357,CI 0.105-0.999)were found to be the significant factors causing impaired visual acuity.
Conclusion: There is high risk of impaired visual acuity in individuals who don't do exercise regularly and who are exposed to excessive fumes.
Key words: impaired vision, lack of exercise, exposure to excessive fumes

INTRODUCTION

The eye is the lamp of body. If your eyes are good, your whole body will be full of light. Visual acuity is the measure of smallest retinal image which can be appreciated. Impaired visual acuity is one of the most prevalent problems in our community. Our basic aim is to create awareness among people that how they can take care of their visual acuity by taking simple measures. Impaired visual acuity causes disturbance in day to day work. We have seen that following factors aggravate impaired visual acuity:

Diabetes[1], Formaldehyde and fumigants[2], Lack of helmet goggles and sun glasses[3], Vit A deficiency[4], Trachoma[5] predispose to impaired visualacuity. Cataract[6], Depression[7], Aging[8], Over use of computer[9], Excessive TV watching[10] leads to impaired visual acuity. Conjunctivitis[11], Malnutrition[12] Fatigue[13], Use of other people glasses[14],Unhgienic Conditions[15] aggravate impaired visual acuity, Dim light work[16],Impure kajal or surma use[17],Use of unsafe hair dyes[18], Irregular

MATERIALS & METHODS

Dependent variable is impaired visual acuity. Independent variables are Diabetes, Formaldehyde and fumigants, Lack of helmet goggles and sun glasses, Vit A deficiency, Trachoma, Cataract, Depression, aging, Over use of computer, Excessive TV watching, Conjunctivitis, Malnutrition, Fatigue, Use of other people glasses, Unhygienic conditions, Dim light work, Impure kajal or surma use, Use of unsafe hair dyes and Irregular use of glasses or lenses

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Study Design is Case control. Study area is Lahore urban area. Study population is Adults. Inclusion Criteria for the cases is People with impaired visual acuity. Controls are People with normal visual acuity. Exclusion Criteria for the cases & controls are people not willing, mentally insane, very old and hard of hearing. Social and Ethical Considerations will be observed. Sample size will be calculated through Epi-info. Random sampling will be done. The data will be compiled and analyzed through SPSS. Before carrying out the actual exercise of data collection, questionnaire will be tested on some subjects on experimental basis to observe any deficiency in questionnaire and Ethical and social acceptability of questionnaire.

Distribution: A total of 100 individuals (50 cases and 50 controls) were recruited in the study. Overall 55% of the total individuals were males and 45% were females (55 males and 45 females).30% were above matric whereas 70% below matric.40% were skilled whereas 60% unskilled. Overall income of 49% was upto 3000 and income of 51% was more than 3000. overall 50% were married,49% unmarried and 1% divorced.

Multivariate analysis: The bivariate analysis showed above some of the sociodemographic factors exhibiting statistically significant association with impaired visual acuity including lack of exercise, exposure to fumes. Multivariate logistic regression model was used to control for the possible confounding effect of these sociodemographic factors on each other. It was observed that after the controlling for the sociodemographic factors, only lack of exercise exhibited a statistically significant relationship with the determinants of impaired visual acuity whereas obesity, lack of regular prayers, no rest after lunch, smoking, lack of sound sleep, poor personal hygiene, diabetes, use of kajal and surma, exposure to fumes, use of helmet and goggles, lack

of eggs in diet, lack of milk in diet, vitamin a deficiency, depression. conjunctivitus, excessive use of hair dye, continuous work despite fatigue, irregular use of power glasses, misuse of spectacles, overuse of computers without shield, excessive use of TV in dark did not exhibit a statistically significant relationship with the impaired vision.. Similarly in the bivariate analysis some of the sociodemographic factors did not exhibit statistically significant association with impaired visual acuity including obesity ,lack of regular prayers, no rest after lunch, smoking, lack of sound sleep, poor personal hygiene, diabetes ,use of kajal and surma, use of helmet and goggles, lack of eggs in diet, lack of milk in diet, vitamin A deficiency, depression, conjunctivitus, excessive use of hair dye, continuous work despite fatigue, irregular use of power glasses, misuse of

spectacles, overuse of computers without shield, excessive use of TV in dark .did not exhibit a statistically significant relationship with the impaired visual acuity. However after multivariate analysis only obesity ,lack of regular prayers, no rest after lunch, smoking, lack of sound sleep, poor personal hygiene, diabetes ,use of kajal and surma, exposure to fumes, use of helmet and goggles, lack of eggs in diet, lack of milk in diet, vitamin A deficiency, depression, conjunctivitus, excessive use of hair dye, continuous work despite fatigue, irregular use of power glasses, misuse of spectacles, overuse of computers without shield, excessive use of TV in dark. did not exhibit a statistically significant relationship with the impaired visual acuity whereas lack of exercise. Exhibited a statistically significant relationship with the impaired visual acuity.

Variables	Crude OR	95% CI	Adjusted OR	95% CI
Lack of exercise	0.352	0.156-0.795	0.259	0.086-0.781
Obesity	0.513	0.219-1.205	0.538	0.165-1.754
Lack of offering prayer	1.308	0.586-2.919	1.365	0.401-4.649
No rest after lunch	0.688	0.299-1.58	0.792	0.233-2.696
Smoking	1.07	0.393-2.912	0.485	0.70-3.350
Lack of sound sleep	0.912	0.409-2.073	0.631	0.174-2.290
Poor personal hygiene	1.61	0.503	2.405	0.571-10.131
Diabetes	2.82	0.96-8.26	2.284	0.651-16.581
Use of kajal and surma	0.991	0.395-2.49	0.808	0.198-3.299
Exposure to fumesand fumigant	0.317	0.105-0.990	0.602	0.166-2.187
Lack of use of helmet goggles	1.648	0.745-3.647	0.800	0.299-2.799
Lack of eggs in diet	0.714	0324-1.575	0.740	0.261-2.096
Lack of milk in diet	0.522	0.325-1.119	0.512	0.147-1.787
Vit. A deficiency	1.113	0.449-2.757	2.094	0.483-9.079
Depression	0.494	0.207-1.180	0.548	0.139-2.170
Redness and watering of eye	0.744	0.322-1.117	0.563	0.175-1.815
Work in dim light	1.119	0.504-2.482	1.209	0.365-3.999
Excessive use of hair dye	0.838	0.348-2.021	0.887	0.234-3.357
Fatigue	1.142	0.825-4.115	3.217	0.953-10.864
Irregular use of power glasses	0.997	0.441-2.250	1.686	0.587-5.950
Misuse of spectacle	0.513	0.187-1.406	0.312	0.58-1.667
Use of computer without shield	0.917	0.417-2.014	6.631	0.182-2.191
Watching TV in dark	1.700	0.764-3.781	3.195	0.843-12.113

DISCUSSION

After bivariate analysis it was found that lack of exercise led to impaired visual acuity. However no results were found in previous studies. Obesity did not lead to impaired visual acuity, however no results were found in previous studies. Lack of offering prayers did not lead to impaired visual acuity, however ,no results were found in previous studies. Lack of rest after lunch did not lead to impaired visual acuity, however no results were found in previous studies. Smoking dint lead to impaired visual acuity, however no results were found in previous studies. Lack of sound sleep dint lead to impaired visual acuity. However no results were found in previous

studies. Poor personal hygiene did not lead to impaired visual acuity. However poor personal hygiene was found associated with impaired visual acuity. Diabetes did not lead to impaired visual acuity however diabetes was found associated with impaired visual acuity in previous studies. Excessive use of kajal and surma did not lead to impaired visual acuity. However use of unsafe kajal surma was found associated with impaired visual acuity in previous studies. Repeated exposure to formaldehyde and fumigants did not lead to impaired visual acuity. However repeated exposure to formaldehyde and fumigants was found associated with impaired visual acuity in previous studies. Irregular use of helmet

goggles and sun glasses did not lead to impaired visual acuity. However irregular use of helmet goggles and sun glasses was found associated with impaired visual acuity in previous studies. diet deficient in eggs and milk did not lead to impaired visual acuity, however diet deficient in eggs and milk was found associated with impaired visual acuity in previous studies. Lack of vitamin A did not lead to impaired visual acuity. However lack of vitamin A was found associated with impaired visual acuity in previous studies. Depression and anxiety did not lead to impaired visual acuity. However depression and anxiety was found associated with impaired visual acuity in previous studies. Conjunctivitis did not lead to impaired visual acuity. However conjunctivitis was found associated with impaired visual acuity in previous studies. Prolonged work in dim light did not lead to impaired visual acuity, however prolonged work in dim light was found associated with impaired visual acuity previous studies. Excessive and persistent use of hair dye did not lead to impaired visual acuity however excessive and persistent use of hair dye was found associated with impaired visual in previous studies. Lack of rest and fatigue did not lead to impaired visual acuity however lack of rest and fatigue was found associated with impaired visual in previous studies .irregular use of spectacles did not lead to impaired visual acuity however lack of rest and fatigue was found associated with impaired visual in previous studies. Misuse of spectacles did not lead to impaired visual acuity however misuse of spectacles was found associated with impaired visual acuity in previous studies. Excessive use of computer did not lead to impaired visual acuity however excessive use of computer was found associated with impaired visual in previous studies. Excessive TV watching did not lead to impaired visual acuity however excessive TV watching was found associated with impaired visual in previous studies

CONCLUSION

The bivariate analysis showed above some of the socio-demographic factors exhibiting statistically significant association with impaired visual acuity including lack of exercise, exposure to fumes and fumigants. Similarly in the bivariant analysis some of the socio-demographic factors did not exhibit statistically significant association with impaired visual acuity including offering no prayers, obesity , lack of rest after lunch, smoking ,lack of sound sleep, lack of washing hands, diabetes, lack of kajal and surma ,lack of use of helmet and goggles. Use of egg daily in diet, lack of regular use of milk .difficulty in seeing at night. depression redness and watering in eyes .habit of working in dim light. Use of hair dye

continuous work inspite of fatigue .irregular use of glasses. use of other people glasses. habit of watching TV in dark, use of computer without protective shield.

It was observed that after the controlling for the socio-demographic factors via multivariate analysis, lack of exercise exhibited a statistically significant relationship with the impaired visual acuity.

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