

Ocular Status, Ocular Health Seeking Behavior and Barriers to Uptake Eye Care Services among Garment Workers in Bangladesh

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ABSTRACT

Purpose: The purpose of this study was to find out the ocular status, ocular health-seeking behaviors and barriers to the uptake of eye care services among garment workers in Dhaka, Bangladesh.

Methods: This is a descriptive community-based study. The study was conducted at Savar and Narayanganj in Dhaka city where garment workers are living. There were 260 garment workers aged from 18 to 60 years were screened their eyes. They were also interviewed face to face in a structured questionnaire to collect information about health-seeking behaviors and identify the barriers to the uptake of eye care services.

Result: Among 260 respondents, about 45.77% were male and 54.23% were female. About 45.4% had ocular complaints and 54.6% had no complaints. Among the respondents (n=260), related ocular abnormalities were 37.70%, (n=98), the diagnosed problems were Refractive error (10.0%), Allergic conjunctivitis (1.5%), Squint (0.4%), conjunctivitis (0.4%), cataract (1.9%), However (10.40%) were referred to the eye care center, 31.90% were given optical correction and 57.70% were given general

measure. 86% never went to hospital. The main reasons assigned for not going to an eye doctor 6.7% were financial constraints, 67.9% did not feel necessary, 3.1% were lack of escort, 16.1% had lack of time, the traditional belief was 2.2%, and 4% were not aware of a hospital doctor. Most of the workers conceived that the recent cost of treatment is very high. They desired low treatment costs, free spectacles, and free eye camps including more facilities.

Conclusion: Relative to studies of other occupational groups in middle-income countries, these garment workers reported overall good health; their most notable problem was musculoskeletal symptoms and refractive error and the near point of convergence insufficiency which means early presbyopia.

Keywords: Refractive Error, Presbyopia, Eye Care, Barriers.

INTRODUCTION

Bangladesh is home to the second-largest readymade garment (RMG) industry in the world, following China. (Munir Ahmed et al 2022). Garment production accounts for over 80% of Bangladesh's total export earnings. The

nature of tasks involved in the production of garments, such as sewing and cutting, requires close viewing of the material and tools, making good near vision a requirement for garment workers. (Munir Ahmed et al 2022). Ocular disorders in factory professionals are the combination of individual visual problems, poor environmental conditions, improper work habits, high concentration, continuous looking at fixed objects and lesser blinking of eyelids. These result in visual symptoms and, various external ocular diseases such as blepharitis, conjunctivitis, dry eye, pterygium, and pingueculae. (Sadhana Sharma et al 2021) Dry eye and MGD is also common problem among garment workers. (Rashid MA, Teo CHY et al 2020)

Work-related hazards have been identified as causes of ocular morbidities among industrial workers (Griffith and Jones, 1994; Lipscomb, 2000; Schoemaker et al. 2000; Okoye and Umeth. 2002). Workers in the garments industry are exposed to various severe hazards (Shoemaker et al 2000). Ocular injuries vary from mild to severe which could threaten vision. Occupation is an important component of socio-economic status which plays a vital role in both individual's life and a nation's progress. In Bangladesh, Industrialization not only brought economic growth but a wide variety of health problems associated with it (Chand, 2001). Recently Garment industry has emerged in a big way competing at global level and has provided employment to millions of people. But because of confined environment, long working hours, stress etc. Workers face a variety of hazards on a daily basis which affect both general and oral health (World Bank, 2012). The ready-made garment industry in Bangladesh consists of many small to medium garment factories, both registered and unregistered, that produced garments catering to foreign buying houses (Mohmud, et al 2004) Bangladesh Garment Manufacturing and Export Association (BGMEA) export about 15.66 billion dollar RMG product (BGMEA,

2014). The export income from this industry alone is one of the top three sources of economic growth in Bangladesh (Gibson et Al. 2004).The rapid growth of the ready-made garments industry in Bangladesh has been facilitated by the following factors: cheap labour; lack of employment options for women; simple technology; small amount of capital required; and economic changes and policies that encouraged the growth of this particular industry (Kabeer, 2004 Mahmud, et al, 2004;Kibria, 1995; Rashid, 2006.)

In America, the Bureau of Labor Statistics reported that the work places eye injuries cost over \$467 million annually. Indirect costs, such as legal fees, judgments, and training replacement workers, place, he estimated total above \$934 million each year (Prevent, Blindness America, 2003).Most work related hazards could be avoided, prevented or reduced through education (Griffith and Jones, 1994; Musa et al.2003), public enlightenment (Canavan and Flaherty, 1980), compliance to work ethics, legislation (Okuyade, 1977;Factories Act, 1990; Okoye and Umeh, 2002) enforcing provision and use of protective devices. Experts believe that proper eye protection could have prevented or equipment are maintained or repaired regularly by the employer are at lower risk of experiencing eye injuries (Yu et al, 2000). Unfortunately, this was not the case in the plant studied. It plays pivotal role in the economy of Bangladesh by accounting for approximately 76% of the total export earnings and nearly 10% of GDP (IFC, 2007). In health production space are Sewing, Gutting, dyeing and finishing), where illumination condition is very important. The total luminous environment usually varies with the type of lighting sources and location of the sources. Poorly designed and maintained lighting can result in glare and flicker that may cause vision problems. When the lighting meets both quantity and quality need, it adds better working performance and productivity

(Gligor, 2004). The main health issues of the garment's workers include incidence of illness, reasons for taking leave, occupational safety and health etc. Across job categories, sewing operators, finishing helpers and quality controllers were found to suffer most from the eye troubles (Zohir, 2008)

The garments workers have played a vital role in accelerating the production of readymade garments. Besides the clear labour advantage, the industry is now fully geared to undertake production and export of all types of ready-made garments. Unfortunately, very limited research has been conducted in Bangladesh on ocular health status and its impact on garments workers. Because of the lack of science data on the above-mentioned issues it is almost impossible to understand the dimension of the problem, which is needed for developing national as well as local programs.

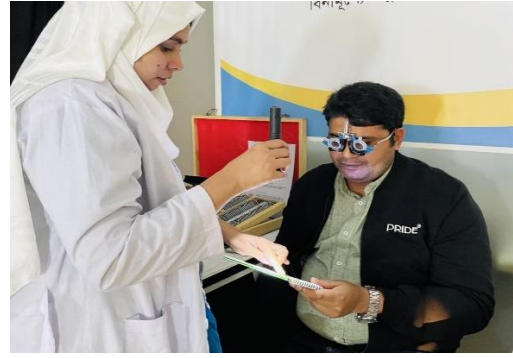
Therefore, a comprehensive study, I think is needed to determine the status of ocular health among garments workers, and its impact on garments industry of Bangladesh

METHODOLOGY

This was a community-based cross-sectional study, randomized convenient sampling which has been conducted at Savar and Narayanganj in Dhaka division, Bangladesh. Garment workers aged 18 to 60 years were assessed within a period from January 2023 to June 2023. Total respondents were 260. Those who provide informed consent and both male and female garment workers were included in this study. Non-cooperative and mentally challenged patients were excluded from this study. Where both qualitative & quantitative data were collected from garment workers. Quantitative data were collected by examining

the health status and qualitative data were collected by standard questionnaire. Demographic and other relevant histories were recorded from the workers in a structured questionnaire through face-to-face interviews before the ocular examination. Uncorrected, Pinhole distance visual acuity was measured monocularly by the Snellen Acuity chart. Aided visual acuity was measured for the workers who had previous spectacles. Near visual acuity was measured with the help of the 'N' Notation near vision chart. Refraction was done in all cases with the help of a retinoscope. Subjective refraction was done with the help of a trial set. The anterior segment was examined by Torchlight, and the Posterior segment was examined by ophthalmoscope.

Non-clinical data was collected with an interview schedule, where the major indications included demographic, socio-economic background, knowledge of eye health, eye health-seeking behaviors, utilization of eye care services, and factors responsible for barriers. All quantitative and qualitative data were processed using SPSS version 22.0. Both univariate and bivariate analysis was done to describe and show relationships. Interpretation of qualitative data was done under the guidance of a senior researcher. Graphs, charts, and tables were used to make the findings easy to understand. Statistics used are frequency distribution, percentage distribution, measurement of central tendency and measures of dispersion (Standard deviation). All data were presented in an appropriate form like tabulation and graphical presentations were used in this study to present data. Graphical data presentations were done with the help of a Microsoft Office Excel sheet.



RESULTS

Table 1: Visual acuity of the respondents:

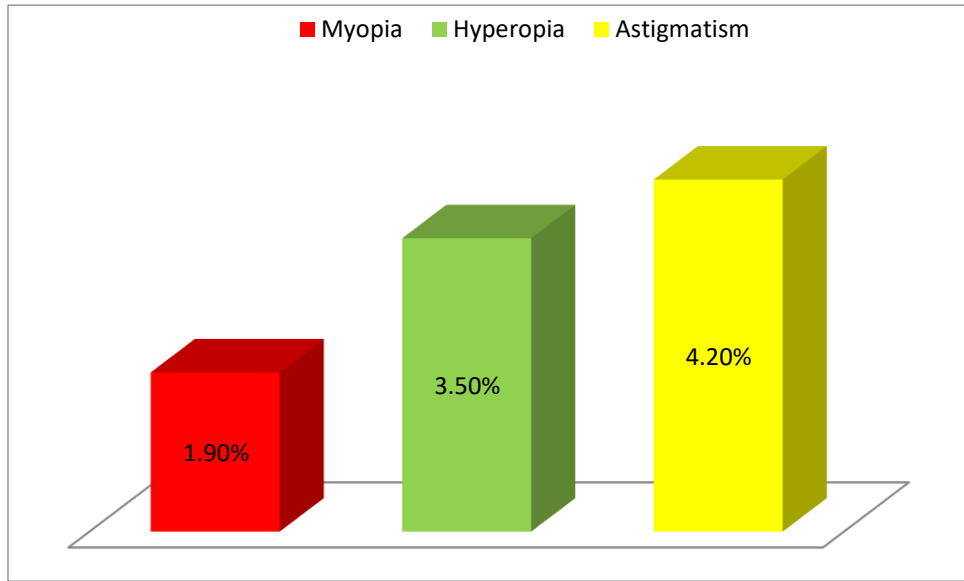
Visual Acuity	Frequency	Percentage
6/6	438	84.2
6/9-6/18	56	10.8
6/24-3/60	24	4.6
<3/60-PL	2	0.4
Total	520	100.0

Note: VA is counted in total 520 eyes.

Table 2: Percentage Distribution of the Diagnosis of the Respondents:

Ocular Morbidities	Number of Problem	Percentage of cases (%)
Refractive Error	52	10.0
Allergic Conjunctivitis	8	1.5
Squint	2	0.4
Cataract	10	1.9
Conjunctivitis	2	0.4
Dacryocystitis	18	3.5
Presbyopia	112	21.5
Others	12	2.3
Normal	304	58.5
Total	520	100.0

Graph 1: Pattern of Refractive Error



After performing refraction with Retinoscopy, from 260 respondents Of 520 eyes 9.6% was Refractive error. Refractive error is more in

female (54.2%) than male (45.8%). And most of the refractive error was astigmatism.

Table 3: Association between Presbyopia and Age

Age Group	Presbyopia		Number	Percentage of presbyopia
	Yes	No		
18-30	10	157	167	6%
31-40	39	35	74	52%
Above 40	19	0	19	100%
Total	68	192	260	26.15%

Here, from this study percentage of early presbyopia is detected more as they usually doing near work constantly from 8 hours to 12 hours in a day. Someone work there since 8 years to 20 years even more than. That's why

they gradually loss their accommodation day by day and get early presbyopia. And also detected that presbyopia is more in female (48%) than male (20%). And total percentage of presbyopia was 26.15%.

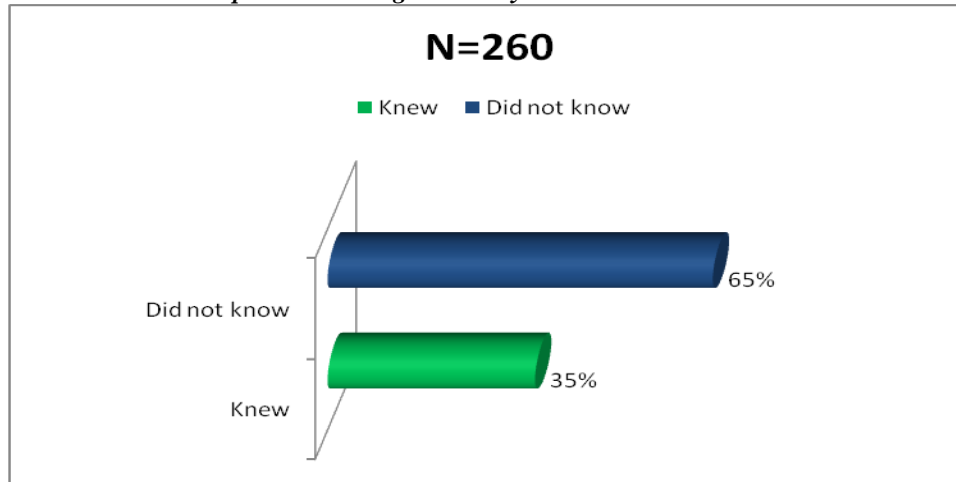
Table 4: Treatment protocols of the respondents:

Treatment Protocols	Percentage
General measure	57.70
Optical correction	31.90
Referred to hospital	10.40

Here, General measure include eye exercise, counselling, hot compression for stye, cold compression for allergic conjunctivitis.

Information based on Qualitative Assessment:

Graph 2: Knowledge about Eye Care Centre Facilities



Here, the above figure shows that from 260 respondents, about 65% respondents did not know about eye care facilities and where the Eye care center and. Even respondents were also asked to know about the nearest eye care

center or Eye hospitals from where they are living. About 35% respondents knew where the eye care center and how to get the eye care facilities.

Table 5: Reason for not going to eye doctor

Reasons	Number	Percentage
Financial constraints	51	19.61
Did not feel necessary	152	58.46
Lack of escort	7	2.69
Lack of time	36	13.86
Traditional belief	5	1.92
Not aware of hospital doctor	9	3.46
Total	260	100.0

Here, Most common for not going to eye doctor was they did not feel necessary.

Table 6: knowledge related to ocular injury of the respondents

	Number	Percentage
Visited village doctor	33	12.7
Rinsed of eye with water	141	54.2
Cold compression	15	5.8
Hot compression	41	15.8
Wiped out with cloth	8	3.1
Use eye drop	22	8.5
Total	260	100.0

Here, they commonly wash their eyes in case of any ocular injury.

DISCUSSION

Most of the garment workers lead very poor life. They come from different areas of

Bangladesh. Most of them live in semi slum areas with limited living condition. They come with other garment workers of their native village. Most of the workers are of 18 to 25 years. This age is proper time for education but they are deprived of that. As a result, vast

majority worker's (49%) had secondary level education. Traditionally, the parents of a girl, especially in rural Bangladesh, try to marry her, once she reaches puberty, as she becomes a matter of concern for the family. The study was revealed that about 44% of the garments are married who are living with their family. Garment workers go to factories very early in the morning and return home at 8 or 9 pm at night. Most of the workers work more than hours. According to the Labor Law, Maximum working hour per day is 10 including the overtime. The salary structure is very poor. The salary structure is very poor. Although they work extremely hard but their salary structure is not attractive at all. About 84% workers hardly receive monthly salary of 7500 to 10,000 (BDT) approximately and sometimes even lesser than this amount. Sometimes salary is not paid in due time with this meagre amount of money, they can ill afford to think about their health since the bulk of the amount of their earnings for the causes of the house rent, foods, clothing etc. there is no doctor health care facility in some cases (44%), there are no sufficient and pure drinking water and toilets for the workers. They suffer from frequent body ache, musculoskeletal pain because of continues work in the same position either sitting or standing. About 6.5 % worker suffered from headache, 29.6% had blurring of eye complaints and 3.8 % had itching and burning sensation of eye. Due to continue use of cutting machines the workers complain about vibration induced syndrome and headache. Breathing difficulty is due to dust and loose fibers in the cutting section causing allergies. Many of the workers in the cutting section wrap the handles of the shears with a piece of cloth/cloth to reduce the friction of the metallic handle on the muscles resulting in fatigue. Similarly, other study showed, Participants reported a mean monthly income of \$96.90, two-thirds (n¹/609, 66.6%) had a primary school or lower education, and most (80.9%,

n¹/740) were married. Workers had a mean of 5.04 (SD 4.16) years of seniority in their current jobs and worked for a mean of 10.8hours/day. A small percentage (9.29%, n¹/485) of workers owned spectacles at the time of the survey, and one-quarter (28.5%, n¹/4261) reported symptoms of asthenopia. (Munir Ahmed, Mashuda Khatun Shefali et al. 2022) From this study, above data also applicable for female garment workers of Bangladesh. By the sewing section, piercing of wound was the most common type of injury at the time of stitching. The workers injury their eyes while stitching as the broken needle flying into the eyes. Injury at both index finger and middle fingers was common for woman in thread cutting section. Accidents commonly occur in laundry section is because of inadequate safely system especially while washing and spin drying the garments. In iron section, number of cases were reported for burning and discomfort. Continuous exposure to high level of noise over a period of time result in noise induced loss of hearing among the workers. Due to continuous use of system iron, the workers face respiratory problems. It is interesting to note that finding of some international studies (Sadhana Sharma, Ranju Kharel Sitaula et al. 2021) are very similar to our study particular on the prevalence rater of refractive error and headache. The finding indicate that these diseases are prevalence rate of allergic conjunctivitis may be occurring for dust from garments atmosphere. The socio-economic factor seems to have a significant relationship with ocular diseases among garments workers. The lower in the occupation status of the workers, the higher is the rate of eye problem of workers. This finding is consistent with findings of other countries (Ajalyeoba et al.2007).

CONCLUSION

This study found 37.70% ocular morbidities among garments workers. The majority of the workers cannot afford for medical treatment

due to lack of money, escort, lack of time, lack of awareness, lack of education. As eye care facilities are available in Dhaka city compared to other districts in Bangladesh, but most of the workers cannot advantage of it for financial reason and lack of knowledge. Relative to studies of other occupational groups in middle income countries, these garment workers reported overall good health; their most notable problem was musculoskeletal symptoms and refractive error and the near point of convergence insufficiency that means early presbyopia. It is also observed that the lack of awareness and low priority given to eye care are important factors influencing ocular health seeking behavior of garment workers.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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