

Frequency of asthenopia symptoms among tailors of Rawalpindi: A cross-sectional survey

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A B S T R A C T

Introduction: Textile experts perform extensive close labor in small, densely packed workstations, exposing themselves to a variety of ocular and vision-related issues.

Objectives: To find the frequency of asthenopic symptoms among tailors and to associate their asthenopia with their working environment profile which includes many factors such as lighting conditions, position blubs, working hours, working days, and taking breaks during work.

Methodology: This cross-sectional study was conducted over five months from October 2018 to February 2019 and it included 325 sewing professionals of garments (tailors) from the tailoring market of Rawalpindi. Study subjects were interviewed through a structured questionnaire that included demographic, working profiles, and symptoms of asthenopia. Data were analyzed by using SPSS version 21. The Chi-square test was used to check the association of dependent and independent variables.

Results: A total of 325 subjects were included in this study. In the current study total of 48% of the asthenopia is present in tailors. Almost every patient presented with more than one complaint. The most frequent asthenopic symptoms were headache 54.5% followed by watering of the eyes 44.6% and blurriness of vision 44.3%. A significant association was found between asthenopia and lighting conditions with a p-value of 0.01. The working days and spectacle-wearing were also significantly associated with asthenopia.

Conclusion: This study showed a relatively high frequency of asthenopia among subjects and it is strongly associated with the lighting conditions and working hours of the subjects.

Keywords: Asthenopia, Sewing Professionals, Tailors, Visual discomfort, Refractive error

Introduction

Asthenopia is a term that refers to a group of somatic or perceptual typically arise after using a computer, mobile phone, or near activities.¹ Visual discomfort symptoms such as decreased reading skills, light sensitivity, hazy vision, diplopia, eye strain, headache, and perceptual distortions are all indications of asthenopia.² Because these asthenopia symptoms can be severe enough to limit personal activities and possibly accelerate the

development of age-related eye diseases, they have become a major public health concern.³ Asthenopia frequently appears to be associated with activities requiring near vision or close work.

Sewing is the skill of repairing or attaching materials with stitches created with a needle and thread. Sewing specialists, often known as tailors, work on clothing, designs, and precise patterns, which all need a high level

of visual attention and mental concentration and are frequently a near-point task. In our country, tasks are typically conducted for long periods in small, densely packed workstations, exposing workers to a variety of vision-related issues because these professions are the source of income.⁴ Due to poor working conditions, incorrect working posture, and excessive prolonged concentration by constant gazing at a stationary object with limited blinking of eyelids, these professionals are prone to a variety of ocular illnesses and vision impairments.⁵ It has been noted that prolonged close viewing/tasks induce visual symptoms such as impaired vision or squinting, frequently losing place when reading, diplopia, and neck, shoulder, and back pain. Refractive error and binocular vision abnormalities can cause or intensify these symptoms.⁶ The binocular vision anomalies and many asthenopia symptoms could be manifest due to the prolonged near tasks and activities thus the main aim of this study was to assess the frequency of asthenopia symptoms among tailors and to associate their asthenopia with their working environment profile which includes many factors such as lighting conditions, position blubs, working hours, working days and taking breaks during work.

Methodology

This study was conducted at the tailoring market of Rawalpindi. This cross-sectional study included only male respondents residing in Rawalpindi with the age of 15 to 60 years and working experience of at least 5 years. By using the non-probability consecutive sampling technique, data was collected over five months from October 2018 to February 2019, and data collection was done in the first two months of the study duration.

A structured questionnaire was used for data collection, the first part of the questionnaire collected information about the socio-demographics of the patients while the second part included questions regarding the working profile of the respondents such as working hours, working days, and the position of the bulb, and lighting condition. The third part contains questions regarding symptoms of asthenopia and their visual status. The respondents who had more than two symptoms would be considered as the asthenopia same criteria used in the previous study.⁷ The questionnaire was written in the English language initially, but it was translated into the local language to ensure the

understanding of the participants. Permission was taken from the Ethical review committee of Al-Shifa trust eye hospital before data collection. Moreover, verbal informed consent was also taken from every individual before they participated in this study. Face and content validity was checked by circulating it to experts in the field. All the data was collected by the primary researcher itself. The confidentiality of the patient's data was maintained and ethical values of research were properly considered and followed at every step of the study.

The responses in the questionnaire were recorded and analyzed using Statistical Package for social sciences (SPSS) version 21. The descriptive analysis was done on the categorical and continuous variables. Percentages and frequencies were reported for categorical variables, as well as mean and standard deviation was reported for continuous variables. The inferential analysis was done by applying the Chi-Square of independence to find the association between dependent and independent variables.

Results

A total of 325 participants were included in this study. All the respondents were male with a response rate of 100% and with a mean age of 31.5 years, ranging from 18 to 45 years. Out of the total majority of the respondents were married (215, 66.2%) having no education (127, 39.2%). The majority (289, 89%) of the respondent reported that they do not use any spectacles either for distance or near (Table 1).

Table 1: Socio-Demographic characteristic of the respondents (N=325)

Variable	Category	F	Percentage
Education Status	No Education	127	39.2
	Primary	89	27.4
	Secondary	90	27.7
	Higher	19	5.8
Marital Status	Married	215	66.2
	Unmarried	110	33.8
Monthly Income	10,000-15,000	142	43.7
	15,000,20,00	96	29.5
	>20,000	87	26.8
Spectacle Wear	Yes	36	11
	No	289	89

The majority of the respondents (157, 48.3%) reported that they work in moderate lighting conditions while the minimum (23, 7.1%) reported that they work in poor lighting conditions. Almost 60% of the respondents reported that they work for maximum hours of 10 to 12 on a maximum of six working days (Table 2).

Table 2: Working profile of the respondents (N=325)

Variables	Category	F	Percentage
Lighting Condition	Poor	23	7.1
	Moderate	157	48.3
	High	145	44.6
Position of the Bulb	Front	38	11.7
	Back	22	6.8
	Side (left/right)	33	10.2
	Up on roof	232	71.2
Working Hours	6-7	10	3.1
	8-10	89	27.4
	10-12	188	57.8
	More than 12	38	11.7
Break during work	No break	181	55.7
	Often	132	41.5
	Every after 1 hour	9	2.8
Working Days	7 days	88	27.1
	6 days	205	63.1
	5 days	26	8.0
	Others	6	1.8

Headache (54.5%) was the most common asthenopic symptom found in the respondents followed by watering of the eye (44.6%), blurriness of vision (44.3%), and eye fatigue (43.1%). Almost 98% of the respondents reported that they don't experience double vision during their near work (Table 3).

There were significant associations found between the asthenopia and lightning conditions, spectacles wearers and refractive error having p-value of less than 0.05 (Table 4).

Table 3: Frequency of asthenopic symptoms among respondents N=325

Variables	Category	F	Percentage
Headache	Yes	177	54.5
	No	148	45.4
Eye fatigue	Yes	140	43.1
	No	185	56.9
Double vision	Yes	27	8.3
	No	298	91.7
Blurriness of vision	Yes	144	44.3
	No	181	55.7
Watering of eyes	Yes	145	44.6
	No	180	55.4
Eye strain	Yes	71	21.8
	No	254	78.2
Redness of eyes	Yes	68	20.9
	No	257	79.1
Difficulty tracking objects	Yes	56	17.2
	No	269	82.8
Burning sensation	Yes	76	23.4
	No	249	76.6

Total 156, 48% asthenopia were reported among tailors whereas 169, 52% were those having no asthenopia.

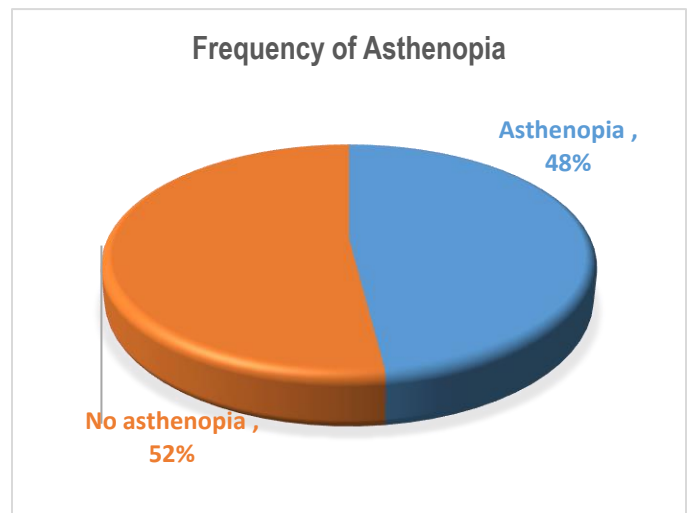


Figure 1: Frequency of asthenopia among tailors

Table 4: Association of asthenopia and working profile of the tailors

Variables	Categories	Asthenopia N (%)	No Asthenopia N (%)	P-value
Lightening condition	Poor	6 (2)	17 (5)	0.01
	Moderate	64 (20)	93 (29)	
	High	96 (29)	49 (15)	
Position of Bulb	Front	17 (5)	21 (7)	0.636
	Back	13 (4)	9 (3)	
	Side(right/left)	15 (5)	18 (5)	
	On the top	121 (37)	111 (34)	
Break	No break	87 (27)	94 (28)	0.196
	Often	76 (24)	59 (18)	
	At every 1 hour	3 (1)	6 (2)	
Working Hours	6-7 hours	3 (1)	7 (2)	0.482
	8-10 hours	49 (15)	40 (12)	
	10-12 hours	94 (29)	94 (29)	
	More than 12 hour	20 (6)	18 (6)	
Working Days	7 days	28 (9)	60 (19)	0.01
	6 days	122 (37)	83 (25)	
	5 days	15 (4.6)	16 (5)	
Spectacle Wear	No	157 (48)	134 (41)	0.002
	yes	9 (3)	25 (8)	
	Yes	17 (5)	35 (10)	

Discussion

The main objective of this study was to find the frequency of presenting clinical feature asthenopic symptoms among tailors who are sewing professional garments. The study was carried out at the tailoring market of Rawalpindi over six months from October 2018 to February 2019. This is the first study that addresses the asthenopic symptoms of this profession according to the best of our knowledge.

In the present study, only male tailors were targeted and a total of 48% of asthenopia was reported among tailors which is greater than the study conducted among sewing professionals where asthenopia was found to be 38.7%.⁸ Similar studies conducted among jewelry workers showed that 65.22% were found to have symptoms like computer vision syndrome.⁹ The study conducted in Swedish found 23.1% asthenopia among school children but they used different questionnaires.¹⁰ Another study conducted in China stated that 57% of study subjects had asthenopia which means that asthenopia is more common among school children due to their excessive near work and tailors also have excessive near work which leads

them to have asthenopic symptoms.¹¹ The scarcity of population-based studies, particularly on tailors, makes it difficult to compare our findings to those of other researchers. To put it another way, the absence of research on similar age ranges, the same population, the use of diverse criteria and outcomes, and the analysis of some professions with more exposure to close work make it difficult to compare the findings of this study with those of other similar studies.

In the present, study there is a strong association between the spectacle-wearing and asthenopia having a p-value of less than 0.05 and it is by the study conducted in an Australian population-based study with 6 to 16 years children, in which asthenopia is seven times more likely to be using spectacle than those who do not use glasses with the odds ratio of 7.1 95% CI (4.6–10.9).¹² Asthenopia symptoms are typically one of the criteria used by eye care specialists to prescribe glasses, this link could be related to reverse causation.

The present study showed that the most common symptoms of asthenopia were headache 54.3% followed by the blurriness of the vision 44.6%, the results are similar

to another study conducted in Pakistan which states that the most frequent asthenopic symptoms were headache 93% followed by blurred vision 90%.¹³ Accommodation, convergence, and meiosis occur when near work is performed, causing extra-ocular muscles to contract for the respective movement, resulting in eyestrain. As a result, headache and eyeball ache become the most asthenopic symptom, accounting for 38.7% of cases, which is consistent with our findings.¹⁴

The current study showed a significant association between asthenopia and lighting conditions which means that poor light could exaggerate the asthenopic symptoms and working days are also found associated with asthenopia. In the modern era load work on the tailors. As a result of our findings, we believe that visual tiredness is becoming a rising public health concern among professionals who do a lot of close work. The high occurrence of asthenopia symptoms is most likely linked to a person's psychological condition, surroundings, health status, and dietary and lifestyle behaviors. As a result, regular eye exams, workplace safety requirements, and the use of adequate eye-protective equipment can help workers' eyesight and productivity.

Conclusion

It is concluded that physician satisfaction with laboratory services in public hospitals of AJK was very low, more than 50% of the patients showed dissatisfaction with the services. The main factors which affect the overall satisfaction of physicians with laboratory services were the absence of the assistance handbook, laboratory request form, and turnover time of the reports. So targeted strategies are needed to improve the overall quality of these services.

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