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PREVALENCE OF NECK AND LOW BACK PAIN AMONG OPHTHALMOLOGISTS OF PESHAWAR

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Abstract

Background:

Ophthalmologists are prone to develop neck and back pain. They use ophthalmology related diagnostic and surgical instruments in forward head posture, unstable back and sustained positions. Their perfect hand and eye coordination, fine manipulation work and repetitive tasks put stresses on the body especially on the spine.

Methods:

A cross-sectional survey was conducted on Ophthalmologists at all three government tertiary care hospitals in Peshawar (HMC, KTH & LRH). We used convenience sampling with a sample size of 109 ophthalmologists. We excluded the optometrists and those ophthalmologists either having experience less than one year or not attending the clinic. OMPQ questionnaire was used for data collection. Data was collected between march and august 2019 and analysed using SPSS version 23. Chi-square test and spearman test were applied to calculate the correlations.

Results:

Out of all 109 ophthalmologists, 88 were males and the remaining 21 were females. The age ranging from 28 to 63 years. The neck pain was reported in 22 (20.2%) ophthalmologists, back pain was reported in 28 (25.7%), and combined neck and back pain were reported in 27 (24.8%) ophthalmologists. The remaining 32 (29.4%) ophthalmologists were pain free having no pain in the neck and back. There were significant correlations between OMPQ score and four demographic variables; age, designation, hours spent per week in OPD and number of surgeries performed per week.

Conclusion:

Neck and low back pain appear to be very common in ophthalmology community. Awkward and sustained posture for eye examination and surgery are main culprits for developing symptoms in the spine and upper body parts. The unsupported back and forward head posture using different diagnostic and surgical instruments in ophthalmology clinic for long time can cause discomforts. Adjusting the instruments according to their height and compatibility can prevent the pain to develop among ophthalmology community.

Frontier in Medical & Health Research

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INTRODUCTION

Neck pain is an unpleasant sensation that is either from trauma or indirect injuries to the cervical spine including soft tissues and these sensations are carried by sensory neurons to the brain (Kumar & Elavarasi, 2016). Neck pain may or may not radiate into one or both arms that last for not less than one day. There are four levels of severity that were recognize for neck pain that accompanied with arm pain or in the absence of arm pain (Hoy et al., 2014). Pain in the area between superior nuchal line and spines of the scapulae is termed as neck pain which lasts for at least one day and limits the activities. The neck pain among ophthalmologists is due to many factors like prolong working hours, unbearable sitting position while watching and operating microscope (Natarajan & Nair, 2016). Globally pain in the neck is major cause of impairment. Many personal and environmental factors are linked with pain in neck. Neck pain is variable in different people because of difference in their professions, like health care workers, agricultural workers, factory workers while performing manual tasks. Globally pain in the neck causes limitations in daily life activities such as turning head while driving, while using computer and sports activities. Neck pain onset in younger population may also be associated with race or smoking (Vassilaki & Hurwitz, 2014). Medical professionals are exposed to neck pain among them particularly ophthalmologists are at greater risk. It may be difficult to realize that majority work related dysfunctions in ophthalmologists are due to daily work routine at hospital (Honavar, 2017). Low back pain is hurting sensation in the area between costal margins and gluteal folds either radiating down to the legs or localized (Schnurrer-Luke Vrbanić, 2011). Monotonous tasks, unpleasant and continuous working posture are probable components for occupational low back pain disorder (Hyer et al., 2015). Low back pain is a global issue and is experienced by everyone in their life. low back pain is mostly common in obese women. Low back pain burden is mostly common in under-developed and low economic countries (Hoy et al., 2010). Doctors are at higher risk to develop many related occupational disorders. Doctors are prone to developed many wide ranges of physical, biological and physiological disorders because of many factors in their jobs at hospital. Doctors developed work related disorders because of their prolong awkward posture during surgery and examination (Hengel et al., 2011) (Wong et al., 2022). Ophthalmologist is a doctor who is specialized in the treatment of diseases of the eyes especially related to sight. Ophthalmology profession has two main divisions which are general ophthalmology and ophthalmic surgery. Further sub-specialties are Neuro-ophthalmology, Ocular oncology, Pediatric ophthalmology and many more. The diagnostic and surgical instruments which are used in the field of ophthalmology are slit lamp direct and indirect ophthalmoscope (Spivey, 1991). Ophthalmologists have reported more neck and low back pain than other physicians due to their heavy work load especially in surgical procedures (Al-Marwani and Al-Juhani et al., 2015). Neck and back pain is caused by excessive and prolong use of muscles, tendons, ligaments and joints of the spine (Mehta & Hubbard III, 2013). Continuous working posture while operating slit lamp is a cause of neck and back pain in ophthalmologists (Shah & Dave, 2012). Consistent posture for an extended period of time and repetitive twisting and bending produce physical load which are the possible causes of neck and low back pain (Kitzmann et al., 2012). Eye care professionals have greater prevalence of neck and low back pain in contrast to other physicians due to narrow adjustability of the ocular slit lamp (Chams et al., 2004). Consultant and surgeon ophthalmologists are highly prone to neck and back pain due to repetitive use of ophthalmology related diagnostic equipment. The pain was recorded as mild to moderate and decreased on holidays (Shaw et al., 2017). A survey of British consultant ophthalmologists identified that the longest surveying consultants had increased incidence of neck and low back pain (Diaconita et al., 2019). Neck and back pain are proportional to working years. Despite, increasing age is a common confounder. Individuals who performed regular exercise shows lower rate of neck and low back pain (Chatterjee et al., 1994). In ophthalmic subspecialty like vitreoretinal surgeries are correlated with prolonged posture and bending of neck and back which are the leading factors for producing pain (Dhimitri et al., 2005). A study shows that physicians and surgeons have musculoskeletal discomfort and growing issue among ophthalmologists and optometrists, which is a serious risk to career longevity and performance (Szeto et al., 2009).

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The estimated prevalence of neck and lower back pain in adult population was reported 10-22% and 36-37% respectively in United Kingdom. A survey was conducted by royal college of ophthalmologists in which 518 responses were shown in which the back pain was recorded by 50.6% (262 out of 518) and neck pain was 31.8% (165 out of 518), while 62.4% (323 out of 518) shows either one or both and 33.6% (174 out of 518) shows pain during operating (Venkatesh & Kumar, 2017). A study was conducted on 325 consultant ophthalmologists in the United State in which 81% (141 out of 325) had low back pain while 34% (59 out of 325) had neck pain (Soueid et al., 2010). A study was systematically reviewed which shows the prevalence of neck and back pain among ophthalmologist in which 46% had neck pain and 26% had low back pain. A survey of British and Eire association shows the prevalence of neck and back pain in vitreoretinal surgeons is 68% and 34% in general ophthalmic surgeons (Sivak-Callcott et al., 2011). A survey in Northeastern United State is performed on 697 ophthalmologists which shows 39% low back pain and 32.6% neck pain (Singh et al., 2024). A study was conducted on 169 ophthalmologists in California in which 50% of the participant reported musculoskeletal pain in the last one year,46% of the participants showed neck pain while 36% showed lower back pain (Lee et al., 2024). A cross-sectional survey on ophthalmologists from North America acknowledge that 52% of the ophthalmologists show neck and lower back pain. A national survey in the united state described that 62% of the eye care professionals had either neck pain or back pain. Another study was conducted in Saudi Arabia on ophthalmologist which reported 70% neck and low back pain in the participants (Jones & Wang, 2023). A survey was performed in Saudi Arabia among 85 ophthalmologists, 57 out of them were surgeons and 28 were medical ophthalmologists which reported 70% neck and low back pain. The prevalence of neck and low back pain among surgeons was 91% and 82% among medical ophthalmologists (Banerjee & Chakraborty, 2023). A survey was completed on 135 surgeons, which showed that during the past 1 year 80% of the participants felt musculoskeletal pain. In which the neck pain was 89.9% and low back pain was 68.1%, 35.6 % of the respondents reported pain during their work while 44% reported pain at the end of the day (Jones & Wang, 2023). Increased working hours in outpatient department (OPD) with using indirect ophthalmoscopy and retinal laser showed a positive association with neck and back pain. This study was performed in India on 651 ophthalmologists which include 394 male ophthalmologists and 257 female ophthalmologists. The reported neck and back pain were 70% (Hurwitz et al., 2018).

Regardless the fact that ophthalmologists are very prone to develop neck or cervical and back pain because of repetitive work, prolong and awkward position and high psychological load. These factors produce musculoskeletal discomforts among these ophthalmologists. Among ophthalmologists, ophthalmic surgeons work with highly manipulative tasks (prolong standing with heel up, forward head posture, unsupported arms work, and perfect hand and eye coordination) and different instruments (slit lamp, operating microscope, indirect ophthalmoscope and surgical loupe along with forceps, capsule polishers, lens manipulators and choppers, retinal picks and suture needle) for different types of ophthalmic surgeries which ultimately lead to develop neck, upper back, shoulders, arms and lower back pain. However, no such studies were identified to find the prevalence of neck and lower back pain among ophthalmologists in Peshawar Khyber Pakhtunkhwa (KPK). The aim of the study is to explore the neck and back pain among ophthalmologists providing eye care in Peshawar Pakistan.

Materials and Methods

3.1 Study design

Our study design was cross-sectional study

3.2 Study population

Our study population was ophthalmologists who provide eye health care in Peshawar.

3.3 Study settings

Our study settings were in three government tertiary care hospitals which were;

Hayatabad Medical Complex (HMC)

Khyber teaching hospital (KTH)

Lady Reading hospital (LRH)

3.4 Sampling technique

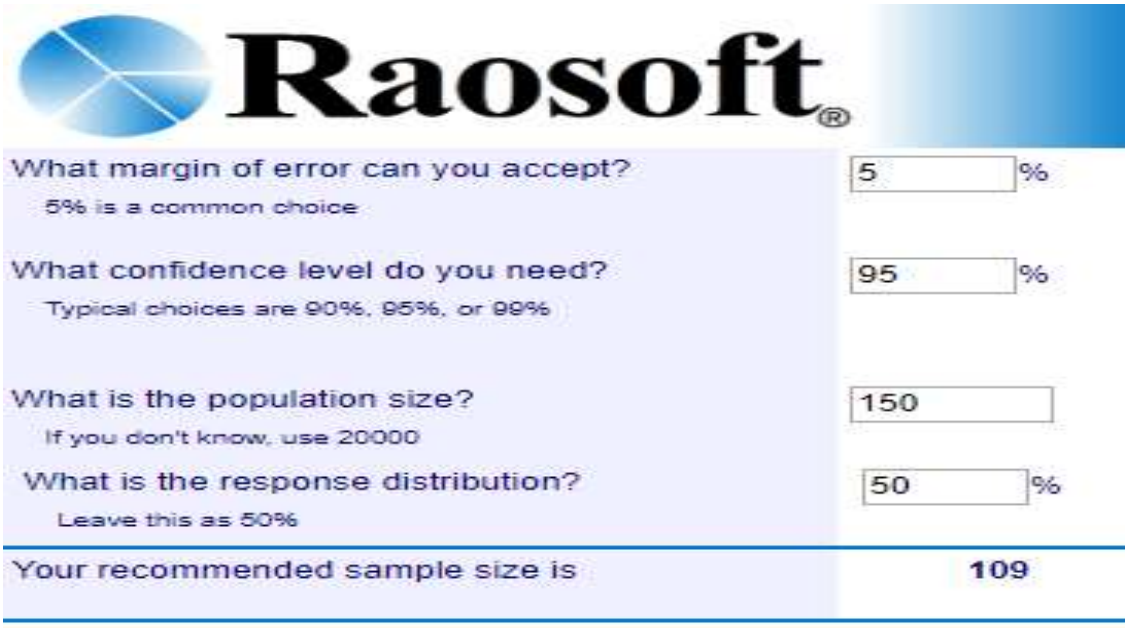
Our sampling technique was convenience sampling.

Frontier in Medical & Health Research

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3.5 Sample size

Our target population was 150 ophthalmologists. We calculated the sample size using Raosoft online calculator. The drawn sample size was 109 ophthalmologists as shown in the figure.



3.6 Inclusion and exclusion criteria

Inclusion criteria

The inclusion criteria of our study were ophthalmologists having at least one year of clinical experience. They include;

- Professors
- Assistant professors
- Associate professors and
- TMOs

Exclusion criteria

- Ophthalmologists having clinical experience less than one year.
- Ophthalmologists who do not attend the clinic (or have left the job)
- Optometrists and house officers (HOs) were also excluded.

3.7 Data collection procedures

After the approval of presented research proposal, the demanded data was collected from tertiary care hospitals in Peshawar. Before the data collection, permission was taken from respected hospitals. Then we went to ophthalmology departments of these hospitals and information sheet was provided to the participants. Consent was taken from each and every subject willing to participate in the study. Orebro Musculoskeletal Pain Questionnaire (OMPQ) was used for data collection. Hard copies of questionnaire were distributed among subjects. Ophthalmologists have filled the questionnaires accordingly and handed over.

3.8 Outcome measures

We used Orebro Musculoskeletal Pain Questionnaire (OMPQ) which describes the pain, impact of pain on physiological and psychological health. It consists of 21 questions. The total score of the questionnaire is 210 (each question has 10 score). It has three categories; low, moderate and high. A score less than 105 is considered mild pain/problem and low risk, score from 105 to 130 is considered moderate and more than 130 is considered severe pain/problem and high risk.

3.9 Data analysis procedure

Data was analyzed through SPSS version 23. Means and standard deviations of age, BMI, designation, hours spent per week in OPD, hours spent per week in OT and experience in years were calculated. The prevalence of neck pain, low back pain and

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combined neck and low back pain was calculated. We used Chi-square test to find out the P-value.

RESULTS

4.1 Demographics

The mean age ±S.D of the sample population was 44.11 ±8.83. We divided the age into four categories; I (26-35), II (36-45), III (46-55) and IV (56-65).

In category I, 26 (23.85%) ophthalmologists were placed. In category II, 19 (17.43%) ophthalmologists were categorized while 57 (52.29%) ophthalmologists fall into category III. Lastly in category IV, a total of 7 (6.42%) ophthalmologists were placed. A total of 88 (80.73%) participants were males and the remaining 21 (19.26%) were females as shown in the table 4.1.

The ophthalmologists were taken from 3 tertiary care hospitals; HMC, KTH and LRH Peshawar. Out of total 109, 37 (33.94%) from HMC, 36 (33.02%) from KTH and 36 (33.02%) from LRH were included.

The surgeries were broadly classified into two types; major surgeries and minor procedures (injection, washing, eyelid surgery, skin tag release, chalazion). Out of all, 83 (76.14%) ophthalmologists performed major surgeries and the remaining 26 (23.85%) ophthalmologists (TMOs) performed minor procedures.

Out of 109 sample size, 14 (12.84%) professors, 33 (30.27%) associate professors, 36 (33.02%) assistant professors and 26 (23.85%) TMOs were participated in the study as shown.

Similarly, we divided the 'number of surgeries per week' (mean ±SD was 6.45 ±3.46) into three categories; I (1-5 surgeries per week), II (6-10 surgeries per week) and III (11-15 surgeries per week). There were 47 (43.11%) ophthalmologists in category I who performed 1-5 surgeries per week. About 51 (46.78%) performed 6-10 surgeries per week and 11 (10.09%) of them carried out 11-15 surgeries per week as shown in the table 4.1.

Table 4.1: Demographic and Occupational Profile of the Study Ophthalmologists distribution by age, gender, hospital affiliation, academic rank, type of surgical practice, and weekly surgical volume.

Variables		Total	Percentage
Age	(26-35)	26	23.85%
	(36-45)	19	17.43%
	(46-55)	57	52.29%
	(56-65)	7	6.42%
Total		109	100%
Gender	Male	88	80.73%
	Female	21	19.26%
Total		109	100%
Hospital	HMC	37	33.94%
	KTH	36	33.02%
	LRH	36	33.02%
Total		109	100%
Type of surgery	Major	83	76.15%
	Minor	26	23.85%
Total		109	100%
Designation	professors	14	12.84%
	Associate prof.	33	30.27%
	Assistant prof.	36	33.02%
	TMO	26	23.85%

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Total		109	100%
No. Of Surgeries (week)	(1-5)	47	43.11%
	(6-10)	51	46.78%
	(11-15)	11	10.09%
Total		109	100%

4.2 Body Mass Index (BMI) Distribution

The frequency of BMI of participants was calculated. Mean ±SD was 24.04±2.61. Out of 109 participants, 1 (0.9%) was underweight, 79 (72.5%) were normal, 26 (23.9%) were overweight and 3 (2.8%) were obese as shown in the figure 4.1.

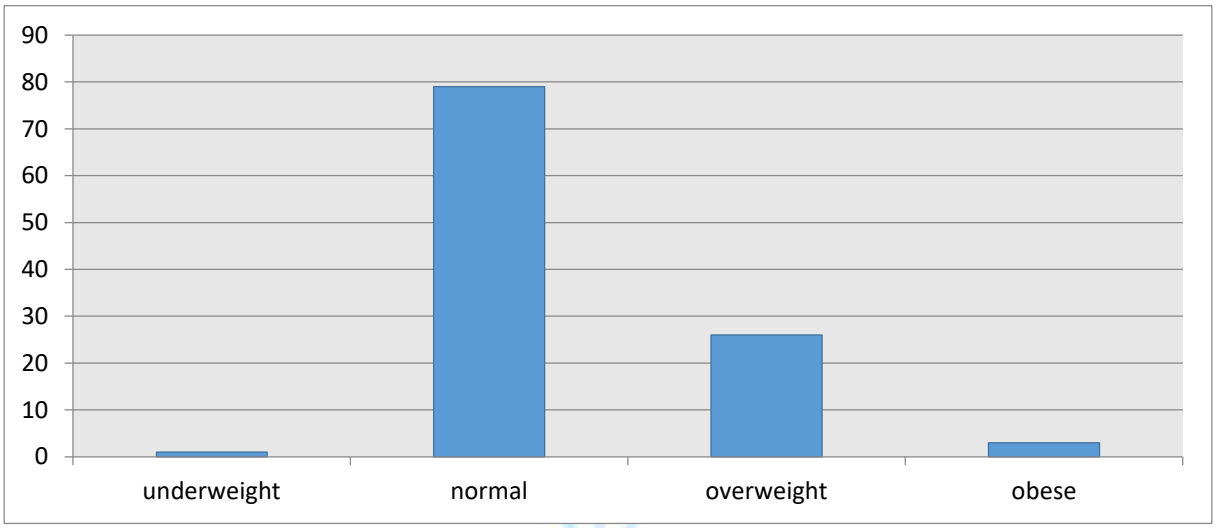


Figure 4.1: Body Mass Index (BMI) Distribution Among Participant Ophthalmologists Mean BMI 24.04 ±2.61, with the majority (72.5%) in the normal weight range.

4.3 Weekly Outpatient Department (OPD) Hours of Participant Ophthalmologists

We made 3 categories for hours spent per week in OPD (mean ±SD was 21±10.89) which are (01-15 hours), (16-30 hours) and (31-45 hours). In first category, the calculated frequency was 54 (49.5%), in second category, the frequency was 28 (25.7%) and in the third category, the frequency was 27 (24%) as shown in the figure 4.2.

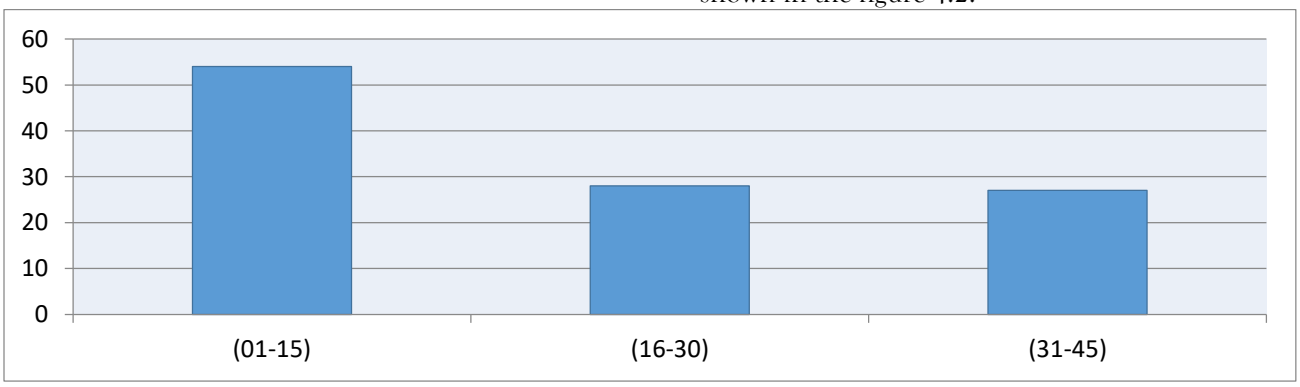


Figure 4.2: Weekly Outpatient Department (OPD) Hours of Participant Ophthalmologists distribution across three categories, with a mean of 21 ±10.89 hours per week.

Frontier in Medical & Health Research

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4.4 Weekly Time Allocation in Operation Theatre (OT)

Similarly, we classified the demographic variable of operation theatre the 'hours spent per week in OT' (mean ±SD was 25.50±9.06) into three categories; (01-15 hours), (16-30 hours) and (31-45 hours). The frequency of first category was 29 (26.6%), second category was 49 (45%) and third category was 31 (28.4%) as shown in the figure 4.3.

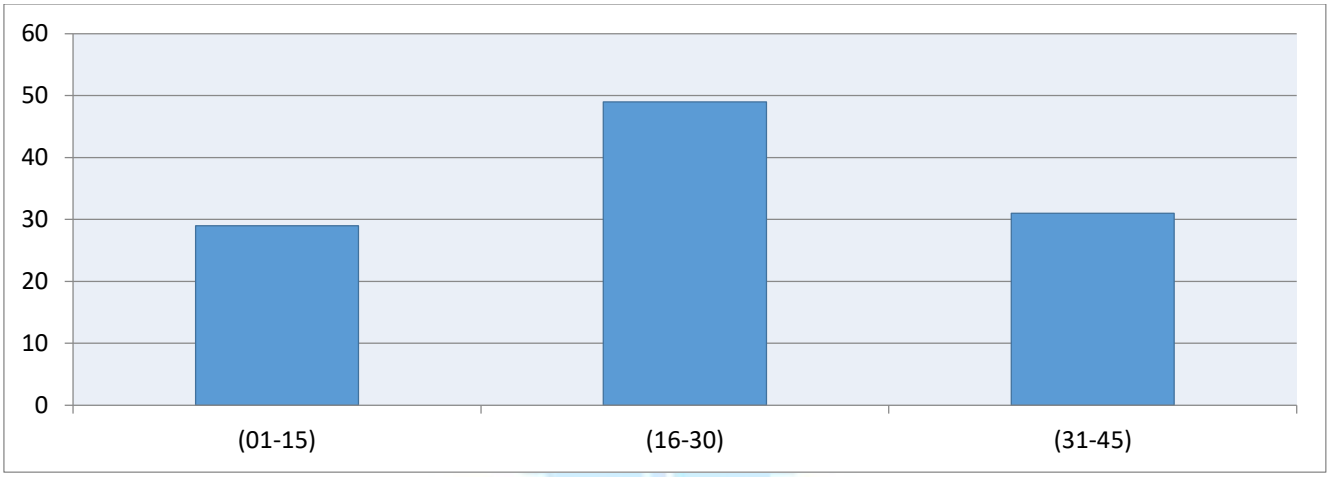


Figure 4.3: Weekly Operation Theatre (OT) Hours of Participant Ophthalmologists distribution across three categories, with a mean of 25.50 ±9.06 hours per week; 45% spent 16-30 hours.

4.5: Years of Professional Experience

We divided the experience (mean ±SD was 11.56±6.16) into 3 groups; (01-10 years), (11-20 years) and (21-30 years). The frequency of; first group (blue color) was 40 (37%), second group (orange) was 65 (59%) and third group (grey) was 4 (3.7%) as shown in the figure 4.4.

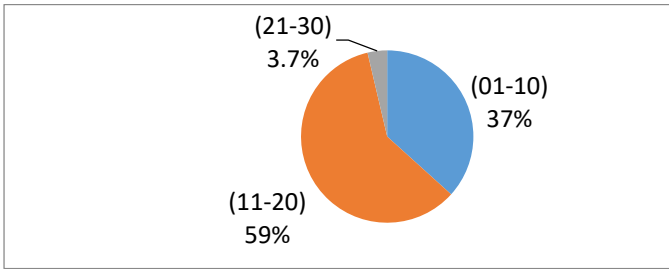


Figure 4.4: Years of Professional Experience Among Participant Ophthalmologists distribution across three groups, with a mean of 11.56 ±6.16 years; 59% had 11-20 years of experience.

4.6 Prevalence and Distribution of Neck and Back Pain

Out of all 109 ophthalmologists, the neck pain was reported in 22 (20.2%) ophthalmologists, back pain was reported in 28 (25.7%), and both neck and back pain were reported in 27 (24.8%) ophthalmologists. The remaining 32 (29.4%) ophthalmologists were pain free as shown in the table 4.2.

In the first category (26-35 years of age), 26 ophthalmologists were placed of whom the frequency of neck pain was 5, low back pain was 6 and both neck and low back pain was 4. About 11 ophthalmologists in this category were pain free.

In the second category (36-45 years of age), there were 19 ophthalmologists. Out of them, 4 had neck pain, 8 had low back pain and 5 had both neck and low back pain. The remaining 2 ophthalmologists had no pain.

Furthermore, in the third category (46-55 years of age), 57 ophthalmologists were categorized. In these category 9 ophthalmologists had neck pain, 14 had low back pain and 15 had both neck and low back

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pain. About 19 of the totals had no pain in these regions.

Lastly, in fourth category (56-65 years of age), only 7 ophthalmologists were there. 4 of them had neck pain and 3 had both neck and low back pain. There was no any ophthalmologist in this group who had low back pain alone but also no ophthalmologist was pain free as shown in the table 4.2.

Table 4.2: Prevalence of Neck and Back Pain Among Ophthalmologists, Stratified by Age Group Over 70% of participants reported pain (neck, back, or both), with pain-free status decreasing with age.

			Where do you have pain?				Total
			Neck	lower back	both	none	
Age categories	(26-35)	Frequency	5	6	4	11	26
		Percentage	4.6%	5.5%	3.7%	10.1%	23.9 %
	(36-45)	Frequency	4	8	5	2	19
		Percentage	3.7%	7.3%	4.6%	1.8%	17.4 %
	(46-55)	Frequency	9	14	15	19	57
		Percentage	8.3%	12.8%	13.8%	17.4%	52.3 %
	(56-65)	Frequency	4	0	3	0	7
		Percentage	3.7%	0.0%	2.8%	0.0%	6.4 %
Total		Frequency	22	28	27	32	109
		Percentage	20.2%	25.7%	24.8%	29.4%	100 %

4.7 Characterization of Musculoskeletal Pain: Severity and Duration

Out of 22 ophthalmologists who had neck pain 5 had mild pain, 8 had moderate and 9 had severe pain. Ophthalmologists who had neck pain 1 was in acute condition, 17 in sub-acute and 4 were in chronic condition. There were 28 ophthalmologists who were observed with low back pain. Out of them, 5 had mild pain, 14 had moderate and 9 had severe pain. Out of them 3 were in acute 20 in sub-acute and 5 were in chronic condition. 27 ophthalmologists had both neck and back pain. Out of them, 1 had mild pain, 16 had moderate and 10 had severe pain as shown in the table 4.3. In this category, 19 were in sub-acute and 8 were in chronic condition. None of them in this category were in acute condition.

Table 4.3: Pain Severity and Duration Among Ophthalmologists with Musculoskeletal Symptoms Distribution of pain intensity (mild, moderate, severe) and condition duration (acute, sub-acute, chronic) for neck pain, back pain, and combined symptoms.

Pain by regions	In the past three months, on average, how bad was your pain on a 0-10 scale?			Total
	Mild (0-2)	moderate (3-6)	severe (7-10)	
Neck	5	8	9	22

Frontier in Medical & Health Research

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low back	5	14	9	28
Both	1	16	10	27

4.8 Correlates of Musculoskeletal Pain Burden (OMPQ Score)

There were four demographic variables in our study with which the Orebro Musculoskeletal Pain Questionnaire (OMPQ) score has significant correlations ($p<0.05$);

- Age with minimum of 28 to maximum of 63 years.
- Designation consists of professors, associate professors, assistant professors and Teaching Medical Officers (TMOs).

had P-value of .000 and spearman correlation co-efficient of -.366 with OMPQ score. The negative sign shows that the correlation was negative which means that as we go from professor to TMO, the OMPQ score decreases.

Similarly, hours spent per week in OPD had also a moderate negative correlation (P-value = .000 spearman correlation co-efficient = -.510) with OMPQ score. The number of hours spent per week in OPD increased, the OMPQ score decreased.

The number of surgeries performed per week with OMPQ score had a positive correlation (P-value =

- Hours spent per week in Out Patient Department (OPD) with minimum value of 08 to maximum of 40 hours and
- Number of surgeries performing per week with minimum value of 01 to maximum of 13 surgeries.

Age with OMPQ score had P-value (.000) and spearman correlation co-efficient (.476) as shown in the table 4.3. There was a positive correlation between them in which the age value increased, the OMPQ score also increased.

Designation

.000 and spearman correlation co-efficient = .403) as shown in the table 4.3. The number of surgeries increased and the OMPQ score increased.

Table 4.3: Spearman's Correlations of Demographic and Occupational Variables with the Örebro Musculoskeletal Pain Questionnaire (OMPQ) Score Age and weekly surgeries show significant positive correlations with pain burden, while higher academic rank and more OPD hours show negative correlations (all $p < 0.001$).

Variables	P- value	Spearman correlation ρ
Age	.000	.476
Designation	.000	-.366
Hours spent per week in OPD	.000	-.510
No. of surgeries per week	.000	.403

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DISCUSSION

Out of all 109 ophthalmologists, 88 were males and 21 were females. Age ranges from 28 to 63 years. These ophthalmologists consisted of 14 professors, 33 associate professors, 36 assistant professors and 26 TMOs. The neck pain was reported in 22 (20.2%) ophthalmologists, back pain was reported in 28 (25.7%), and both neck and back pain were reported in 27 (24.8%) ophthalmologists. The remaining 32 (29.4%) ophthalmologists were pain free.

In United States, Kitzmann and colleagues at university of Lowa conducted a study to find out the prevalence of MSK pain among ophthalmologists. Their results have shown that the prevalence of neck pain was 46% and back pain was 26%. In comparison with these results our study results have shown that the prevalence of neck pain was 20.2% and low back pain was 25.7%. Although the results of back pain were similar but there is a huge difference regarding the prevalence of neck pain. This may be due study setting. Their target population was mainly professors at university with higher age while our target population was consisted of ophthalmologists with different designations (Kitzmann et al., 2012).

Jonathon Hyer showed in their study which was conducted in United Kingdom at the royal college of ophthalmologists that the neck pain was 31.8%, back pain was 50.6% and both neck and back pain was 62.4%. About 37.5% were pain free. Our study results have shown that neck pain was 20.2% and back pain was 25.7% and both neck and back pain was 24.8%. About 27.4% were pain free. The difference between the results of their study and our study may be due to difference in sample size. Our sample size was 109 and their sample size was 518 which was much larger than ours (Hyer et al., 2015).

An internet base study was conducted by Diaconita and colleagues in Canada to find out occupational MSK pain in ophthalmology community. The participants in their study were 169 ophthalmologists. The results of their study have shown that that the prevalence of neck pain was 46% and low back pain was 36%.In comparison with these results our study results have shown that the prevalence of neck pain was 20.2% and low back pain was 25.7% the difference in the results could be due to sample size difference and this study included optometrists as well in their study which we have excluded (Diaconita et al., 2019).

A study was conducted in United Kingdom by Chatterjee and co-workers on consultant ophthalmologists. The sample size of their study was 325 consultant ophthalmologists. Out of them 174 was ophthalmic surgeon. Their study results have shown that 34% had neck pain while 81% had back pain. In comparison, our study results have shown that the prevalence of neck pain was 20.2% and back pain was 25.7%. There is difference regarding the prevalence of neck and back pain. The difference may be due to their large sample size and greater number of ophthalmic surgeons in their study (Patel et al., 2022).

Dhimitri and co-workers conducted a study on 697 ophthalmologists in the north eastern united state. Their study was focused on neck and low back MSK disorders. Their study results have shown that the prevalence of neck pain was 32.6% and low back pain was 39%. In relation to their study results our study results have shown that the prevalence of neck pain was 20.2% and low back pain was 25.7%. Thus shows a little bit difference in the prevalence of both neck and low back pain. The difference in the result could be due to their large sample size as compared to our study (Dhimitri et al., 2005).

Al-Marwani conducted a study in Riyadh Saudi Arabia to find out the magnitude of neck and low back pain among ophthalmologists. The participants in their study were 165 ophthalmologists. The results of their study have shown that the prevalence of neck and/or low back pain was 70%. In comparison with these results, our study results have shown that the prevalence of neck and/or low back pain was 70.6%. the remaining 29.4% ophthalmologists were pain free (Al-Marwani Al-Juhani et al., 2015).

A study was conducted among Indian ophthalmologists by Vankatesh and Kumar. The sample size of their study was 651 ophthalmologists. The results of their study have shown that33% had neck pain and 49% had back pain and the prevalence of neck and back pain was 70%. Our study results in comparison with their result have shown that the prevalence of neck pain was 20.2% and back pain was 25.7% and both neck and low back pain was 24.8%. This shows a huge difference

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in the prevalence of neck and back pain. The difference in their study results in relation to our study results could be due to their much larger sample size and according to their study, neck and back pain was more prevalent in females than males. Our study had a smaller ratio (only 21 females) of female participants as compared to their study (257 females). This could be another reason (Venkatesh & Kumar, 2017).

A study was conducted among Iranian ophthalmologist to find out the preceding occupational health out line. The sample size of their study was 162 ophthalmologists. The results of their study have shown that the prevalence of neck pain was 69% and back pain was 80%. In relation to these results our results have shown that the prevalence of neck pain was 20.2% and back pan was 25.7%. According to their study neck and low back pain was more prevalent in woman ophthalmologists than male ophthalmologists. Their sample size had large ratio of females than males. So this could be the possible reason of difference because our study participants had only 21 females (Singh et al., 2024).

Jennifer and colleagues conducted a survey in West Virginia United States on ophthalmic plastic surgeons. The participants in their study were 130 surgeons. Their study results have shown that the prevalence of neck pain was 58% and low back pain was 31.3%. Our study results have shown that the prevalence of neck pain was 20.2% and low back pain was 25.7%. According to their study, ophthalmic surgeons (plastic) were appeared to be very prone to neck pain and injuries because their work (using loupes) puts more stresses on the neck. This could be the possible reason of difference in the results regarding neck pain prevalence (Sivak-Callcott et al., 2011).

CONCLUSION

Neck and low back pain appear to be very common in ophthalmology community. Awkward and sustained posture for different eye examinations and surgeries are main culprits for developing symptoms in the spine and upper body parts. The unsupported back and forward head posture using different diagnostic and surgical instruments in ophthalmology clinic for long time can cause discomforts. Adjusting the instruments according to their height and compatibility can prevent the pain to develop among ophthalmology community.

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