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HEALTH STATUS AND WORKING CONDITIONS OF INTERNATIONAL MIGRANTS IN PETROLEUM INDUSTRIES OF MIDDLE EASTERN COUNTRIES

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Abstract

Background: Immigration of non-nationals to Gulf Cooperation Council (GCC) states enables for a good living but it pushes them to work in harsh, unfamiliar and unfavorable conditions which they were not acquainted with. Objective: To estimate the prevalence of health care problems, working- related problems, accessibility, affordability and barriers to health care services and accidents experienced among immigrants working in desk and field areas of petroleum industries of Middle Eastern countries. Methods: Cross-sectional study was conducted among 400 migrants working in Petroleum companies in semi-urban areas of Middle Eastern countries from January 2022 to June 2022. Semi-structured questionnaire was used to determine their Socio-demographic variables, self-reported health problems, access to health centers and behavioral habits. Results: Majority (76.25%) of them were in age group between 30-50 years. observed prevalence of health problems such as pain, cardiovascular symptoms, gastrointestinal symptoms, psychological symptoms, visual disturbances and trouble sleeping were 79.3%, 80%, 85%, 85.7%, 73.9% and 80% respectively among office workers working for less than eight hours. (Fig.1) Whereas the prevalence of similar health problems was 68%, 100%, 81.2% 66.7%, 68.4% and 68.7% respectively among field workers. **Conclusion:** Current health status of migrant workers in the petroleum companies of the middle eastern countries was not satisfactory. Hence awareness and proper training has to be provided to them and they should be oriented on the various health problems they could encounter in such working space.

Keywords: Health Status, Immigrants, Petroleum Companies, Middle Eastern Countries.

INTRODUCTION

The Middle Eastern Countries are pivotal among the Organization of the Petroleum Exporting Countries (OPEC). The founding members of this organization include Iran, Iraq, Kuwait, Qatar and Saudi Arabia. [1] This organization has exercised considerable power globally till date since 1960 by means of their steady supply throughout the world. To sustain their power and to rectify the shortage in laborers these organizations started recruiting immigrants from all over the world. This proved to be an opportunity which has enabled a lot of immigrants from other countries mainly India, China to migrate to these Middle Eastern Countries in the search of economic stability. The main reason behind international migration is due to the existing poverty, limited employment opportunities, deteriorating agricultural productivity and armed conflict.

It is a known fact that three percent of the global population moves outside their country often for economic reasons. [2] Moreover, the migration of citizens from one place to another has jeopardized their health status, which has become a major global public health issue. [3] These Industrialized countries recruit migrants from other countries for physical labor in short term contracts and they often work in high risk working conditions as they usually accept the jobs that are rejected by the local worker, where often there is inadequate access to health care services due to poor provision of health services, inconvenient location of health services and cultural differences. [4, 5]

Migrant workers of the petroleum companies are exposed to different working conditions and are trained to cope up and work in these situations. A group of people are the field workers who undergo manual laborious work as they are exposed to chemicals in the plants and are more prone to accidents in addition to working under the hot scorching sun. The other group of workers are the desk workers who have very little physical mobility and are prone to chronic morbidity like diabetes.

In view of this the current study is conducted to explore and compare the health status and working conditions among the migrants. The study aims to determine the work-related health problems, health care accessibility and affordability among the immigrants working in desk and field areas of petroleum industries of middle eastern countries. The findings of this survey could be beneficial to design effective information, education and communication (IEC) interventions for the other immigrants who are migrating to the Gulf countries.

MATERIALS AND METHODS

This cross-sectional study of the self-reported health status was conducted among 400 migrants working in petroleum companies in the in the semi urban areas of Middle Eastern Countries. Institutional Ethics Committee approval was obtained prior to initiation of the study. The study was conducted for a period of six months from January 2022 to June 2022. Based on the prevalence of about p=39.5% from the study done by Bener A et al. [5] sample size was calculated using the formula 4pq/d2; q=60.5%, considering 5% allowable error the sample size was calculated as 385. Hence by Simple Random Sampling an approximated sample of 400 migrants were selected from the total number of migrant workers.

Immigrants with at least one year of experience in any of the sectors of petroleum companies were included as study participants and workers from the Middle Eastern countries were excluded. After obtaining informed consent from them the data was collected using a pre-tested and validated semi-structured questionnaire.

The details collected were; socio-demographic features such as age, marital status, occupation, educational status, ethnicity, working hours, accommodation type, personal habits, self-reported health problems and accidents such as burns, falls, cuts, motor vehicle accidents, fractures, dislocations, and faints/temperature occurred within the last 12 months were collected. Accessibility to nearby health center, health insurance availability and usage pattern, yearly occupational health checkups, first aid availability details were also obtained. The workers' knowledge on the occupational hazard of working in a petroleum company and the preventive measure towards preventing it was also collected.

At the end details of the general working environment among their peer workers, heads and other staff of the company were collected. The obtained data was categorized between desk and field workers. Desk workers are those who work indoors on the system.

They are the sedentary workers, who take care of organizing and managing the staffs, meetings and reports. Whereas the field workers are manual workers who work outdoors. The field workers are moderate to heavy workers who undergo laborious work in the different petroleum plants.

Statistical analysis: The data was analyzed using the Statistical Package for the Social Sciences (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp). Descriptive statistics such as frequencies and percentages were calculated.

Chi-square test was used for differences in proportions of categorical variables between two or more groups. Multiple logistic regression analysis methods were used to assess the potential confounders and order the importance of risk factors for the health problems and $p < 0.05$ was considered as the cutoff value for significance.

RESULTS

Totally 400 immigrant workers of different petroleum companies situated in the middle eastern countries participated in this study.

Table 1: Socio-demographic variables of the study participants (n=400)

S.No	Variables	Frequency	Percentage (%)
1	**Age**		
	26-30	30	7.50
	31-35	45	11.25
	36-40	105	26.25
	41-45	105	26.25
	46-50	50	12.50
	51-55	55	13.75
	56-60	10	2.50
2	**Gender**		
	Male	400	100
3	**Marital status**		
	Married	355	88.75
	Single	30	7.50
	Divorced	10	2.50
	Widowed	5	1.25
4	**Nationality**		
	Indian	305	76.25
	Bangladesh	6	1.50
	Indonesian	25	6.25
	Lebanese	5	1.25
	Pakistan	30	7.50
	Philippine	15	3.75
	Singapore	3	0.75
	Srilankan	11	2.75
5	**Country working in**		
	KSA	260	65
	Dubai	15	3.75
	Kuwait	25	6.25
	Qatar	45	11.25
	Oman	55	13.75

6	**Years of experience**		
	1-10	208	52
	11-20	187	46.75
	21-30	5	1.25
7	**Working hours**		
	<8 hours	265	66.25
	>8hours	135	33.75
8	**No. of working days per week**		
	4	90	22.50
	5	235	58.75
	6	75	18.75
9	**Place of work**		
	Office	230	57.50
	Field	170	42.50
10	**Working shift**		
	General	210	52.50
	Day and night	190	47.50
11	**Accommodation**		
	Apartment	185	46.25
	Dormitory	20	5
	Individual house	195	48.75
12	**Income in rupees**		
	25,001 - 50,000	10	2.50
	50,001- 1,00,000	85	21.25
	1,00,001-1,50,000	30	7.50
	1,50,001- 2,00,000	95	23.75
	2,00,001 - 2,50,000	35	8.75
	2,50,001 - 3,00,000	88	22
	3,00,001 - 3,50,000	11	2.75
	3,50,001 - 4,00,000	26	6.50
	4,00,001 - 4,50,000	20	5
13	**Resides with**		
	With family	305	76.25
	Alone	95	23.75

Most of them 305 (76.25%) were between the age range of 30-50 years. All of them were males. About two-thirds 305 (76.25%) of them were of Indians and majority 260 (65%) were working in the industries situated in the Kingdom of Saudi Arabia. About half of them 192 (48%) had more than ten years of working experience in different parts of Middle Eastern Countries.

Among the migrants 230 (57.5%) of them were desk workers and 170 (42.5%) of migrants were field workers. Majority 355(87.5%) of them were married are and among them 305 (76.25%) were residing with their family.

About half of them 235(58.75%) were working a minimum of five days per week where; 66.25% (265) work for less than 8 hours a day and 33.75% (135) work for more than 8 hours a day.

About 85 (21.25%) monthly income was between Rs. 50,000 – Rs. 1,00,000, 95 (23.75%) obtain between Rs. 50,000 - Rs. 2,00,000 and 88(22%) between Rs. 2,50,000 - Rs. 3,00,000. (Table 1)

Table 2: Association between factors affecting the health and the duration of working hours among office workers (n=400)

Variables	Working hours n (%)		Total	p-value
	≤ 8	> 8		
Smoker	30 (75)	10 (25)	40	0.411
Alcoholic	55 (64.7)	30 (35.3)	85	0.22
Drug abuser	5 (100)	0	5	0.135
Language barrier	35 (77.8)	10 (22.2)	45	0.182
Health insurance	140 (68.3)	65 (32.7)	205	0.23
Prefer government hospital	40 (88.8)	5 (11.2)	45	**0.002***
Prefer private hospital	120 (64.8)	65 (35.2)	185	**0.002***
Received safety training	145 (69)	65 (31)	210	0.58
Pleasant working condition	140 (73.7)	50 (26.3)	190	**0.000***
Supportive coworkers	135 (72.9)	50 (27.1)	185	**0.001***
Aware of the occupational hazards	150 (69.8)	65 (30.1)	215	0.801
Encountered an occupational hazard	75 (78.9)	20 (21.1)	95	0.009
Aware of the safety precautions	150 (69.7)	65 (30.3)	215	0.801
Exercises everyday	60 (80)	15 (20)	75	0.017
Get medical leave if sick	110 (62.8)	65 (37.2)	175	**0.000***
Conduct regular check up	120 (68.5)	55 (31.5)	175	0.559
First aid clinic	149 (74.8)	50 (25.2)	199	**0.000***

***p** value <0.05, considered statistically significant

Table 2 shows the association between factors affecting the health of office workers and the duration of working hours, there is significant association observed among the workers preference to obtain treatment at government or private hospital and working duration of ≤ 8 hours. Highly significant findings are also observed between workers working in a pleasant working environment, supportive coworkers, eligibility to avail medical leave when sick and working for ≤ 8 hours.

Table 3: Association between factors affecting the health and the duration of working hours among field workers (n=400)

Variables	Working hours		Total	p-value
	≤8	>8		
Smoker	15 (50)	15 (50)	30	0.144
Alcoholic	15 (75)	5 (25)	20	0.195
Drug abuser	10 (100)	0	10	**0.01***
Language barrier	35 (63.6)	20 (36.4)	55	0.728
Health insurance	60 (54.5)	50 (45.5)	110	**0.009***
First emergency care	95 (63.3)	55 (36.7)	150	0.249
Prefer government hospital	20 (44.5)	25 (55.5)	45	**0.005***
Prefer private hospital	85 (68)	40 (32)	125	**0.005***
Received safety training	100 (60.6)	65 (39.4)	165	0.74
Pleasant working condition	105 (65.6)	55 (34.4)	160	**0.000***
Supportive coworkers	100 (60.6)	65 (39.4)	165	0.074
Aware of the occupational hazards	95 (59.4)	65 (40.6)	160	**0.01***
Encountered an occupational hazard	70 (73.7)	25 (26.3)	95	**0.000***
Aware of the safety precautions	100 (60.6)	65 (39.4)	165	0.074
Exercises everyday	30 (66.7)	15 (33.3)	45	0.43
Get medical leave if sick	75 (57.7)	55 (42.3)	130	0.049
Conduct regular check up	95 (61.3)	60 (38.7)	155	0.682
First aid clinic	95 (59.4)	65 (40.6)	160	**0.01***

***p** value <0.05, considered statistically significant

Table 2 shows the association between factors affecting the health of field workers and the duration of working hours, there is significant association between duration of working hours and persons abusing drugs, possession health insurance, prefers both government and private health facility to get treatment, pleasant working conditions, aware about occupational hazards and first aid facility.

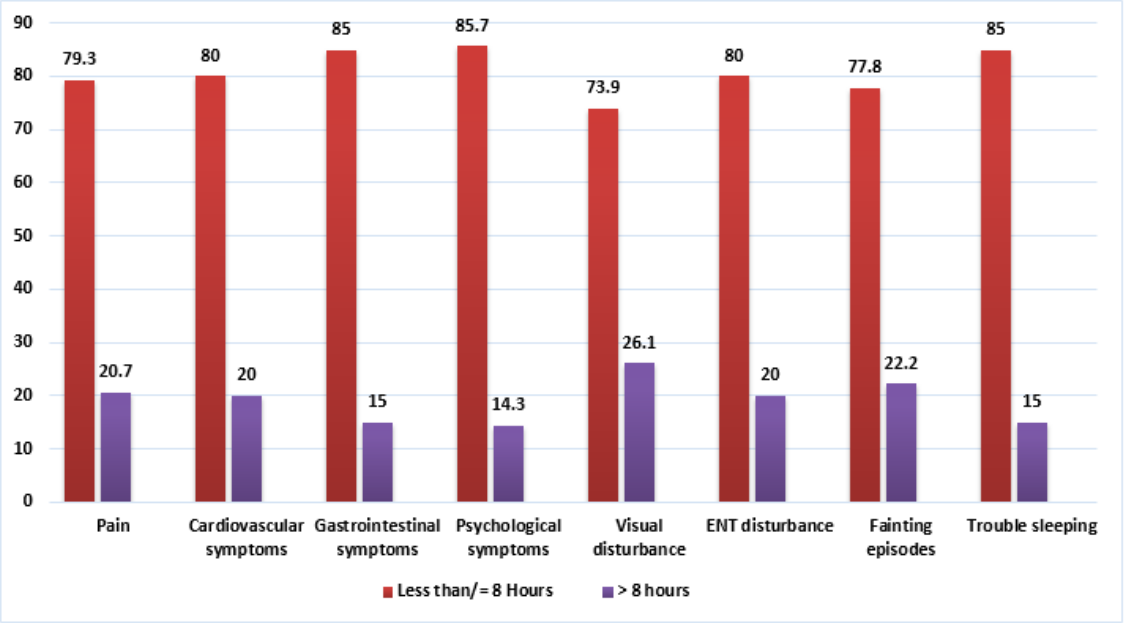

Fig 1: Prevalence of health problems among office workers (n=400)

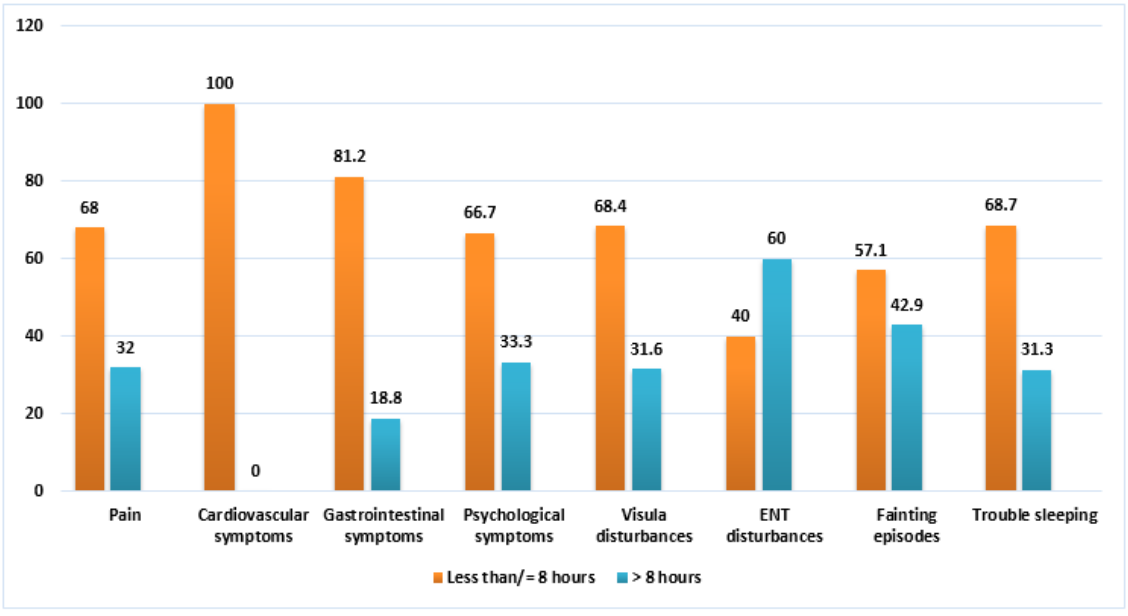

Fig 2: Prevalence of health problems among office workers (n=400)

The observed prevalence of health problems such as pain, cardiovascular symptoms, gastrointestinal symptoms, psychological symptoms, visual disturbances and trouble sleeping were 79.3%, 80%, 85%, 85.7%, 73.9% and 80% respectively among office workers working for < eight hours. (Fig.1) Whereas the prevalence of similar health problems was 68%, 100%, 81.2% 66.7%, 68.4% and 68.7% respectively among field workers. (Fig.2)

Table 4: Association between the health problems among office workers and field workers and working hours (n=400)

Health problems	Office workers			Field workers		
	Working hours		p value	Working hours		p value
	≤8	>8		≤8	>8	
Pain	115 (79.3)	30 (20.7)	**0.000***	85 (68)	30 (32)	**0.000***
Cardiovascular symptoms	20 (80)	5 (20)	0.23	10 (100)	0	0.1
Gastrointestinal symptoms	85 (85)	15 (15)	**0.000***	65 (81.2)	15 (18.8)	**0.000***
Psychological symptoms	90 (85.7)	15 (14.3)	**0.000***	50 (66.7)	25 (33.3)	0.243
Visual disturbance	85 (73.9)	30 (26.1)	0.152	65 (68.4)	30 (31.6)	**0.044***
ENT disturbance	40 (80)	10 (20)	0.70	10 (40)	15 (60)	0.15
Fainted	35 (77.8)	10 (22.2)	0.182	20 (57.1)	15 (42.9)	0.528
Trouble sleeping	85 (85)	15 (15)	**0.000***	55 (68.7)	25 (31.3)	0.077

***p value <0.05, considered statistically significant

Table 4 shows the association between the health problems among office workers and field workers and working hours; there is statistically significant significance observed between health problems such as pain, gastrointestinal symptoms, psychological symptoms, visual disturbances, ENT disturbances, fainting episodes and trouble in sleeping among the workers working for less than/= and more than 8 hours.

DISCUSSION

In this current study (76.25%) were between the age range of 30-50 years and all of them were males. About two-thirds 305 (76.25%) of them were of Indians and majority 260 (65%) were working in the industries situated in the Kingdom of Saudi Arabia. Whereas in a study by Joshi S et al. [3] there are 33.6% of migrant workers from Saudi Arabia and 16.2% were from UAE. In comparison to our study the distribution of migrants across the middle eastern countries were fairly similar.

This slight increase in migrants in the current study may be due to the industrialization and development of new petroleum industries across various regions of Saudi Arabia. Moreover, the increase in migrants may be due to inclusion criteria in this study where migrants from all the countries of one year experience were included. A study conducted among the Nepalese migrants by Adhikary et al. [2] reported that 33.5% of the petroleum workers reported to have encountered injuries or accidents at their workplace.

In contrast to our study only about 6.25% of the migrants reported encountering injuries an accident. The major causes for these accidents among both the studies were similar as for slips, fall, trips etc. The decrease in percentage is mostly due to the educational standard and the awareness among the workers in the petroleum countries. The decrease is an indicator that the working standard of these migrant workers has risen a level above.

The study conducted by Bener A et al. [5] among migrant workers stated that about 39.5% of the workers tend to complain of some sort of pain like headaches, joint pain, leg and hand pain, and back aches due to their work. But according to our study there is a raise to 67.5% which indicates that the work load in the petroleum industries might have increased. Highly significant findings are also observed between workers working in a pleasant working environment, supportive coworkers, eligibility to avail medical leave when sick and working for less than 8 hours.

Moreover, the general health status of the workers has decreased due to the habits which they uptake. According to the study by Moyce et al. [6] immigrants who don't speak the host country's dominant language are at particular risk for occupational injury and poor health status. Without language skills, immigrants are relegated to more dangerous jobs.

According to the current study only about 25% of the total study population are still facing language as their barrier to communication. Due to the human capability to learn and adapt to various different languages and cultures, language which was a huge barrier in the past is changing. Moreover, English, a worldwide known language, has made migration easier.

Both the office and desk migrant workers of the petroleum countries who worked less than 8 hours aday experienced higher percentage of pain (76.7%) and gastrointestinal problems (56.6%) when compared to the workers working more than 8 hours. According to a study conducted byAnbazhagan S et al. [7] pain, gastrointestinal and digestive problems, such as indigestion, heart-burn,stomach ache and loss of appetite, sleep problems were found in around 64% among rotating shiftworkers.

These health problems might be due to the disturbance of the biological clock under stressful conditions. The increase in incidence of pain and GI symptoms among the migrant workers working less than 8 hours might be attributed to the fact that they work in shifts. According to the study done by Salo et al. [8] very low and low work time control workers were associated with higher prevalence of sleep disturbances compared to those with intermediate worktime control.

Likewise, in this study 85 migrant workers who worked less than 8 hours a day complained of trouble while sleeping. Migrants who worked more than 8 hours had less trouble sleeping as they were exhausted from the work which was significant statistically, this could be attributed to heavy workload induces tiredness and falling asleep.

CONCLUSION

Migrant workers working in the petroleum industries of the Middle Eastern Countries experience a lot of health problems like accidents at work, gastrointestinal problems, trouble sleeping and lifestyle like smoking and alcohol. This information on health problems plays a great role in creating awareness among those wanting to work in the petroleum industries of Middle Eastern countries. Moreover, the employees should be oriented on the various health problems they are at risk of encountering and besides having access to the health care facilities they must undergo proper training of all the preventive measures.

LIMITATIONS

This study was targeted towards the men working in petroleum countries of the middle easterncountries. The health status and living conditions of the women is still a big question mark as therewere not many women working in these petroleum countries. Moreover, the data collection from all the middle eastern countries were not equally done. Most of the workers who participated in this research were from Saudi Arabia hence data collection from all the other countries were lacking.

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