

## Prevalence of Stress, Anxiety and Depression among Expatriate Workers

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**Objective:** To determine the prevalence of stress, anxiety and depression among expatriate workers.

**Design:** Systematic randomized study.

**Setting:** Al Razi Health Center, Ministry of Health, Kingdom of Bahrain.

**Method:** The study period was performed during the month of December 2011. Depression Anxiety Stress Scale (DASS) questionnaire was used. The required sample size was 384 with 95% confidence interval (CI) and 5% margin of error. All expatriate patients attending Al Razi health center were eligible to be included in the study. Possible language problems, patients too sick to participate in the study and patients on treatment for any psychiatric disorder were excluded from the study.

**Result:** Stress was seen in 38 (9.9%) patients. Outstanding loans, being unmarried and nationalities were the independent variables that significantly contributed to stress. Seventy-eight (20.3%) expatriates reported anxiety; those with outstanding loans were significantly anxious. Fifty (13%) workers were depressed. Outstanding loans and tobacco use were the contributing factors.

**Conclusion:** Fifty (13%) expatriates were depressed, which is lower than other similar studies conducted in the Middle East region. Our sample was non-representative and possibly small, due to which the 95% confidence interval for the variables was wide. The results of our study, therefore, cannot be generalized to the entire expatriate population in Bahrain.

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International migration has boomed over the last few decades with around 50 million migrants residing in Asia alone and constituting about 3.1% of the world's current population<sup>1</sup>. Most migrants move from low income to middle and high income countries in order to provide for their families and to escape unemployment, war or poverty in their countries.

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Language barriers, discrimination and financial problems have to be endured during their years of service in the country. Many of these workers leave their families in their countries of origin and for years remain separated to be able to provide a better life for their loved ones. These conditions may give rise to anxiety and depression in these people. However, little is known about the degree of impact that these conditions have upon the mental health of these workers.

Several studies revealed various rates of mental illnesses among immigrants residing in the Middle East. Suicides had been estimated to occur at a rate of 1.1/100,000 population per annum, most common among men, people aged 30 to 39 years<sup>2</sup>. A quarter of the male migrant workers in the UAE in 2008 were depressed due to either physical illness, working in the construction industry, earning less than 1000 dirhams (272 US \$) a month and working more than 8 hours a day<sup>3</sup>. The mean suicide rate was 0.6 per 100,000 for Bahrainis and 12.6 per 100,000 for non-Bahrainis, according to the suicide pattern in Bahrain from 1995 to 2004. Most of the non-Bahraini victims were Indian males aged below 35 years with financial problems<sup>4</sup>.

All workers attending Al Razi health center are expatriates, the majority from South-Asian subcontinent. These expatriates have temporary work/residence permits, mainly employed by companies as a source of cheap, flexible and low-skilled labor. They are often not provided adequately for their services and are made to work long hours for a very nominal pay. According to the Health Information Directorate's annual statistics report, nearly 500 patients attend Bahrain's Al Razi health center daily, the majority suffering from musculoskeletal and other vague somatic complaint<sup>5</sup>. They are seen in a very short span of time and are often quickly dispensed with, despite existing language barriers between them and the doctors. Sadly, no effort is made to investigate and to explain the patients' reason for attendance together with financial problems which may be linked to underlying anxiety or even depression.

Until now, no study has been conducted in Bahrain to assess the prevalence of psychiatric morbidity among the expatriate population.

The aim of this study is to determine the prevalence of stress, anxiety and depression among expatriate workers.

## METHOD

This study was performed during the month of December 2011. Three hundred eighty-four expatriates were included in the study. The inclusion was done by selecting a systematic random sample (every third patient).

Because most of the attending patients were illiterate, each selected patient was interviewed by one of the authors. The Depression Anxiety Stress Scale (DASS) questionnaire (available in English and Urdu languages), was translated in Hindi, Malayalam and Tamil<sup>6</sup>.

Dependent variables were selected to measure three outcomes, stress, anxiety and depression and were further re-coded according to the DASS-21 scoring template so as to obtain the outcome scores separately. Cut-off values of  $\geq 15$  and  $\geq 8$  were considered significant for stress and anxiety respectively, a cut-off value of  $\geq 10$  was considered significant for depression.

Data were analyzed through SPSS, version 16.

## RESULT

Three hundred eighty-four expatriates were included in the study, 378 males and 6 females. The mean age was 35.8 years (SD=9.44). Two hundred fifty-seven (67%) were under the age of 40 years, 301 (78%) were married. Two hundred forty-two (63%) were Indians, 84 (22%) were Pakistanis, 25 (6%) were Bangladeshis and 33 (9%) were other nationalities. Muslims and Hindus represented 161 (42%) and 166 (43%) of the religious groups respectively, see table 1.

**Table 1: Personal Characteristics (n=384)**

Characteristics	Number (percentage)	
<b>Age (Years)</b>	20-39	257 (67)
	>=40	127 (33)
<b>Gender</b>	Male	378 (98)
	Female	6 (2)
<b>Nationality</b>	Indian	242 (63)
	Pakistani	84 (22)
	Bangladeshi	25 (6)
	Others	33 (9)
<b>Religion</b>	Muslim	161 (42)
	Hindu	166 (43)
	Christian	22 (6)
	Sikh	35 (9)
<b>Marital Status</b>	Married	301 (78)
	Unmarried	83 (22)
<b>Occupation</b>	Laborer	79 (21)
	Skilled laborer	273 (71)
	Foreman/Supervisor	13 (3)
	Professional	19 (5)
<b>Income (BD)</b>	50 - 99	167 (43)
	100 - 200	173 (45)
	>200	44 (11)
<b>Working Hours</b>	8 hours	156 (41)
	>8 hours	228 (59)
<b>Outstanding Loans</b>	Yes	61 (16)
	No	323 (84)
<b>Use of Tobacco</b>	Yes	130 (34)
	No	254 (66)
<b>Use of Alcohol</b>	Yes	73 (19)
	No	311 (81)
<b>History of Medical Illnesses</b>	Yes	63 (16)
	No	321 (84)

The prevalence of stress was 9.9% (38/384); 8 (32%) were Bangladeshi nationals, 12 (14.3%) were Pakistanis and 18 (7.4%) were Indians. Among religious groups, 6 (17.1%) were Sikhs and 23 (14.3%) were Muslims. Only 9 (5.4%) Hindus had stress. Among occupational groups (laborers, skilled laborers, foremen/supervisors and professionals), 13 (16.5%) laborers reported the highest percentage of prevalence of stress, see table 2.

Prevalence of stress was higher among those who worked for more than 8 hours daily. People earning less than 100 BD (265 US \$) a month had the highest prevalence of stress, 20 (12%). Workers in debt showed high prevalence of stress, 17 (27.9%). Nineteen (14.6%) had stress among tobacco users; whereas, 11 (15.1%) among alcohol consumers.

**Table 2: Characteristics of Respondents Associated with Stress (n=38), Anxiety (n=78) and Depression (n=50)**

Variables	Stress	Crude OR (95% CI)	Anxiety	Crude OR (95% CI)	Depression	Crude OR (95% CI)
<b><u>Age (Years)</u></b>						
<20-39	28 (10.9)	1.4 (0.7-3.0)	48 (18.7)	1	38 (14.8)	1.7 (0.84-3.3)
≥40	10 (7.9)	1	30 (23.6)	1.3 (0.8-2.3)	12 (9.4)	1
<b><u>Gender</u></b>						
Male	38 (10.1)	1.1 (1.1-1.2)	77 (20.4)	1.3 (0.15-11.1)	49 (13)	1
Female	0 (0)	1	1 (16.7)	1	1 (16.7)	0.75 (0.1-6.5)
<b><u>Marital Status</u></b>						
Married	26 (8.6)	1	61 (20.3)	1	34 (11.3)	1
Unmarried	12 (14.5)	1.8 (0.9-3.7)	17 (20.5)	1.0 (0.56-1.9)	16 (19.3)	1.9 (1.0-3.6)
<b><u>Occupation</u></b>						
Laborer	13 (16.5)	3.5 (0.4-29)	20 (25.3)	6.1 (6.1-48.7)	14 (17.7)	1.4 (0.72-2.8)
Skilled Laborer	23 (8.4)	1.7 (0.2-13.0)	54 (19.8)	4.4 (0.6-34)	36 (13.2)	1
Foreman/Supervisor	1 (7.7)	1.5 (0.1-36.4)	3 (23.1)	5.4 (0.5-59)	0 (0)	-
Professional	1 (5.3)	1	1 (5.3)	1	0 (0)	-
<b><u>Nationality</u></b>						
Indian	18 (7.4) ‡	1	43 (17.8)	1.2 (0.4-3.3)	11 (13.1)	1.5 (0.4-5.9)
Pakistani	12 (14.3) ‡	0.2 (0.07-0.5)	22 (26.2)	2.0 (0.7-5.8)	32 (13.2)	1.6 (0.5-5.6)
Bangladeshi	8 (32) ‡	0.5 (0.2-1.1)	8 (32.0)	2.6 (0.74-9.4)	4 (16.0)	1.8 (0.4-8.8)
Others	0 (0)	-	5 (15.2)	1	3 (9.1)	1
<b><u>Religion</u></b>						
Muslim 161	23 (14.3) ‡	2.9 (1.3-6.5)	37 (23)	3.0 (0.7-13.4)	19 (11.3)	2.0 (0.3-16.3)
Sikh 35	6 (17.1) ‡	3.6 (1.2-10.9)	8 (22.9)	3.0 (0.6-15.5)	9 (25.7)	4.8 (0.6-42.3)
Hindu 166	9 (5.4) ‡	1	31 (18.7)	2.3 (0.5-10.3)	21 (12.7)	2.2 (0.3-18.0)
Christian 22	0 (0) ‡	-	-	-	1 (4.5)	1
<b><u>Income (BD)</u></b>						
50-99	20 (12)	0.9 (0.4-1.7)	38 (22.8)	2.3 (0.85-6.2) ‡	32 (19.2)	2.5 (0.6-11.2)
100-200	18 (10.4)	1	35 (20.2)	2.0 (0.7-5.4)	16 (9.2)	1.2 (0.3-5.4)
>200	0 (0)	-	5 (11.4)	1	2 (4.5)	1
<b><u>Working hours®</u></b>						
8 Hours	7 (4.5)	1	25 (16)	1	14 (9)	1
>8 hours	31 (13.6) ‡	3.3 (1.4-7.6)	53 (23.2)	1.6 (0.94-2.7)	36 (15.8)	1.8 (0.95-3.6) ‡
<b><u>Outstanding loans®</u></b>						
Yes	17 (27.9)	5.6 (2.7-11.3)	22 (36.1)	2.7 (1.5-4.9) ‡	17 (27.9)	3.6 (1.8-7.0) ‡
No	21 (6.5) ‡	1	56 (17.3)	1	33 (10.2)	1
<b><u>Medical illness</u></b>						
Yes	6 (9.5)	1	16 (25.4)	1.4 (0.8-2.7)	8 (12.7)	1
No	32 (10)	1.1 (0.9-3.4)	62 (19.3)	1	42 (13.1)	0.97 (0.43-2.2)
<b><u>Alcohol use</u></b>						
Yes	11 (15.1)	1	15 (20.5)	1.0 (0.5-1.9)	9 (12.3)	1
No	27 (8.7)	1.9 (0.9-3.4)	63 (20.3)	1	41 (13.2)	1.1 (0.5-2.3)
<b><u>Tobacco use®</u></b>						
Yes	19 (14.6) ‡	1	38 (26.9)	1.8 (1.1-3.0) ‡	26 (20)	2.2 (1.2-4.0) ‡
No	19 (7.5)	0.47 (0.2-0.9)	43 (16.9)	1	24 (9.4)	1

‡ $\chi^2$  p <0.05

Table 2 shows twelve independent variables (age, gender, marital status, occupation, nationality, income, religion, working hours, outstanding loans, tobacco or alcohol use and medical illness). Only three of the independent variables made a unique statistically significant contribution to the model (outstanding loans, marital status and nationality). The strongest predictor of stress was outstanding loan. Unmarried respondents were three times more likely to report stress than married respondents. Bangladeshi nationals were seven times more likely to report than other nationals.

Seventy-eight (20.3%) participants reported anxiety. Bangladeshis reported the highest prevalence of anxiety (32%), followed by Pakistanis (26.2%) and Indians (17.8%). Muslims and Christians (23% and 22.9% respectively) had the highest prevalence of anxiety, followed by Hindus (18.7%). Laborers were found to be the most anxious among the occupational groups (25.3%), followed by foremen/supervisors (23.1%). Those working more than eight hours a day (23.2%) were more anxious. Expatriates earning less than BD 100 (265 US \$) a month (22.8%) and participants in debt (36.1%) reported a higher prevalence of anxiety. Tobacco users also showed a high prevalence of stress (26.9%), as shown in table 2.

Only three of the independent variables made a unique statistically significant contribution to depression (marital status, outstanding loans and use of tobacco). The strongest predictor of depression was outstanding loan; this indicated that respondents who had outstanding loans were four times more likely to report depression than those who did not have a loan.

## DISCUSSION

Our study showed a prevalence rate of 13% for depression among the expatriate workers, which is lower than what has been observed in most other similar studies across the Gulf<sup>2,3</sup>. Bangladeshi nationals were more likely to report stress, anxiety as well as depression than any other nationality. Educational status has generally been observed to be low among Bangladeshis compared to other nationalities of the South East Asian continent, which might explain this finding.

Amongst religious groups, Sikhs showed the highest prevalence of stress, anxiety and depression. Alcohol consumption is generally known to be higher amongst Sikhs.

However, foremen/supervisors displayed an exceptionally high tendency to be anxious. Greater responsibilities at work and having to supervise junior employees could possibly explain this finding.

Most depressed, anxious and stressed expatriates were unmarried, but still have the burden of supporting their parents and other family members back home financially.

Laborers, both skilled and un-skilled, earning less than BD 200 a month, working more than eight hours a day and in debt, made up the bulk of the study sample and were more likely to be depressed, anxious and stressed. Laborers who have borrowed huge amounts from family and friends back home are often not able to save enough from their meager and irregular income to pay off these loans, thus becoming susceptible to depression and other psychiatric illnesses.

Our sample is small and non-representative. Indians were over-represented and Pakistanis and Bangladeshis were under represented. Therefore, the result of this study cannot be generalized to the entire expatriate population in Bahrain. Also, very few females participated in the study. Another possible limitation could be language and translation.

## CONCLUSION

**Fifty (13%) expatriates were depressed, which is lower than other similar studies conducted in the Middle East region. Our sample was non-representative and possibly small, due to which the 95% confidence interval for the variables was wide. The results of our study, therefore, cannot be generalized to the entire expatriate population in Bahrain.**

**We recommend a comprehensive mental health team, inclusive of a psychologist well-versed in their languages together with a social worker, to be available at Al Razi health center, in order to appropriately help and treat these expatriates.**

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