Original Article

# Medically certified sickness absence among health care workers

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## Abstract

**Objectives:** To compare the days and spells of sickness absence among males versus females and Saudi nationals versus expatriate employees of King Khalid University Hospital, Riyadh, and to identify the cause of sickness absence.

**Methods:** The cross-sectional, descriptive study comprised 3117 King Khalid University Hospital employees. Records of physician-certified sickness absence from January 1 to June 30, 2009, were obtained from the employee health clinic's register. Absence rate, frequency, duration and severity were assessed and compared between genders and nationalities, and causes were noted. SPSS version 16 and student's t test were used for statistical analyses and comparison.

**Result:** A total of 377 (12.1 %) employees had 416 spells of sickness absence with 639 sick-off days (mean: 1.54 ± 0.85). The probability of sickness absence was higher among Saudi (OR=1.33) and female (OR=1.39) employees. The association of sickness absence was not found among the absentees with either gender (p= 0.335) or nationality (p = 0.086).

Almost all spells of sick-off days were of short duration. Longer spells were mainly due to chicken pox which was found to be more among the expatriates. Heavy absenteeism was found only among the Saudis.

The most common causes of sickness absence were acute upper respiratory infection, diseases of musculoskeletal system and the digestive system.

**Conclusion:** The rate, frequency and duration of absence due to sickness in the study were higher among Saudi and female employees. The rate of absence, with passage of time, has increased significantly among Saudi nationals.

**Keywords:** Hospital workers, Absenteeism, Sick absence, Sick-off. (JPMA 62: 900; 2012)

## Introduction

Sickness absence or sick-off is defined as an absence from work for a minimum of one day due to health-related causes. Sickness absence is an important indicator to measure the health status of a person i.e. ability to work and in its absence, loss of productivity.[1]

Frequent sick-off is of great concern to any organisation, particularly hospitals, due to its negative economic and morale impact. Sickness absence is particularly pronounced among hospital workers due to the complex nature of the occupational hazards and the heterogeneity of work type.[2] Hospitals are expected to provide healthcare facilities to their relevant area on 24-hour basis and cannot afford the disruption of services due to sickness absence. Hence, most of the hospitals establish employee's health clinic (EHC) within the working premises to provide healthcare to their employees, to filter out malingerers, to monitor occupational hazards, and to guide the administration in setting priorities and steps for preventing hazards.[3-8]

Most reports of sickness absenteeism among hospital workers refer to the nursing staff. Nurses in any hospital are primarily responsible for frontline patient care and, therefore, are at a high risk of acquiring infections from direct patient contact. In addition, there is a great risk of exposure to contaminated human blood and body fluids.[9-12]

Reports from a number of studies show that the diseases of musculoskeletal system as a result of patient handling and upper respiratory tract infections are major occupational hazards among various hospital health workers.[6,7,12,13]

Certain trends of hiring new employees at King Khalid University Hospital over the past two decades has resulted in a steady increase in the ratio of Saudi nationals from less than 20% in early 1990s to more than 35% in 2007.[6,7]

This study was carried out to investigate the extent and the reasons for sickness absence among the hospital staff of

King Khalid University Hospital. It also compared the different parameters of sickness absence among Saudi nationals versus expatriates and female versus male employees.

## Subjects and Method

The cross-sectional, descriptive study was conducted at King Khalid University Hospital, Riyadh, Saudi Arabia, which is a tertiary care teaching hospital comprising 860 beds, and having all medical and surgical sub-specialties, with an active primary care unit and a 24-hour emergency services department. Shift work for medical and nursing staff working in the emergency department and for in-patients care was organised in three shifts per day, each of 8 hours. In addition, there was a well-established employee health clinic (EHC) conducted by primary care physicians every week from 7.30am to 4.30pm from Saturdays to Wednesdays.

The study reviewed all consecutive consultations over a period of 6 months from January 1 to June 30, 2009 at the hospital EHC. Records of full-time hospital staff attending the EHC were reviewed. Records of physician-certified sickness absence were selected for detailed analysis. The information on each staff was extracted according to their gender, nationality (Saudis versus non-Saudis), diagnosis, spells and duration of sick-off period. Fresh personnel attending the EHC for pre-employment physical checkup for fitness were excluded. Those who did not require any sick leave were also excluded. The sickness absence record of teaching staff (faculty members) was not reviewed due to their care in a separate highly privileged healthcare clinic. Further, those who received their sickness absenteeism certificates from emergency department or other sub-specialty clinics were also excluded from the study. Maternity leave (only one case in our study) was not included in the sickness absence category.

The sick leave issued by EHC physician was evaluated for each indvidual. The duration of sick leave, medical reasons, spells of sick leave per employee, and comparison of sick leave by gender and Saudi-expatriate status was also looked into by the study for which approval of the hospital ethics committee was obtained.

For the purpose of the study certain terms were defined as follows: *Spell*, one episode of sickness absence certified by a doctor of EHC; *employee*, one who was a full-time hospital worker at King Khalid University Hospital; *absentee* full-time hospital employee having one or more spells of sick-off; *short-term absence*, sick leave for ≥ 3 days per spell; *long-term absence*, sick leave for ≥ 4 days per spell; *heavy absentee*, sick leave for a total of 10 days or ≥ 3 spells; *index of severity*, total number of sickness absence per sum of total absentees or employees; *index of duration* (Average length of spell), sick leave days in new spells per number of new sick leave spells (sum of sick-off days per sum of total spells); *index of frequency*; the rate at which new spells of sickness absence occur in a defined population (number of total new spells per sum of total absentees or employees); and *cumulative incidence*, persons with at least one new sick leave spell per number of persons at risk at the beginning of the study (sum of absentees per sum of total employees).

For statistical analysis, data was entered into spreadsheet and processed on SPSS-16 package. The diagnosis of the illness was coded according to the international classification of diseases (ICD, 10th Revision, WHO Version for 2007). The study used descriptive statistics for summarising basic demographic data. Online analytical processing (OLAP) cubes were used to calculate the sum of sick absence in days. Multinominal logistic regression was used to look for the association of sick absence with gender and nationality, whereas means were used to analyse the spells of sickness absence within each sub-group of interest. Student's t-test was used to compare the means, with p-value less than 0.05 being considered significant.

## Results

The total number of full-time employees during the six-month study period was 3117. Of these, 1053 (33.78%) were Saudis. Data on the distribution of the hospital employees according to their work category, gender and nationality was obtained from the personnel department's computerised files. From the database, five major categories were classified according to the type of work and sub-

**Table-1: Spells and duration of sickness absence among employees and absentees by gender and nationality.**

| Variables | Saudi | Non Saudi | Male | Female | Total |
|---|---|---|---|---|---|
| Total Number of hospital employees | 1053 (33.78%) | 2064 (66.21%) | 1351 (43.34%) | 1766 (56.65%) | 3117 |
| Employees received sick-off (%) | 149 (39.5) | 228 (60.5) | 137 (36.3) | 240 (63.7) | 377 (12.1) |
| Spells of sickness absence (Mean) | 169 (1.13) | 247 (1.1) | 155 (1.13) | 261 (1.1) | 416 (1.1) |
| Duration of sickness absence (days) | 245 | 394 | 230 | 409 | 639 |
| days/spell (Mean SD) | 1.5 0.6 | 1.6 1.0 | 1.5 0.9 | 1.6 0.8 | 1.5 0.8 |
| Mean number of days lost per absentee | 1.644 | 1.728 | 1.679 | 1.704 | 1.7 |
| Mean number of spells/employee | 0.16 | 0.12 | 0.115 | 0.15 | 0.13 |
| Mean number of days lost per employee | 0.233 | 0.191 | 0.17 | 0.232 | 0.21 |
| Overall percentage of absentees | 14.15 | 11 | 10.14 | 13.6 | 12.1 |

classified according to gender and nationality (Saudi and non-Saudi). Total Saudi males working in the hospital during the study period were 709 (22.75%); Saudi females were 344 (11%); non-Saudi (expatriate) males were 642 (20.6%); and non-Saudi females were 1422 (45.65%). Non-Saudi female staff members were predominantly in the category of nursing staff (> 98%), whereas there were more Saudis (>85%) in the administrative and craftsmen categories. Half of the Saudis were working in the physician and medical staff category, as well as in the technician and paramedical staff categories.

The study reviewed the records of 3153 attendances to the EHC. Sick leave certificates were issued on 416 (13.2%) occasions to 377 employees (12.1% of the study population), with 639 sick-off days. This gave a cumulative incidence of absence by 0.12 per employee, with an average duration of 0.21 sick-off days (index of severity) and average spells of 0.133 (index of frequency) per employee (Table-1).

Fewer sick-off absence during the month of September was due to the holy month of Ramadan (fasting month), when almost all Saudi nationals and half of the expatriate employees remain on official leave for about 10 days.

Of the 377 absentees, 149 (39.5%) were Saudis and 228 (60.5%) were expatriates. There were 137 (36.3%) males and 240 (63.7%) females. The average duration of sick-off period among the absentees was 1.7 days and average frequency of spells was 1.1 per absentee. The average length

**Table-2a: Frequency distribution of the days and spells of sickness absence by gender and nationality.**

| Days for sickness absence | Saudi | | Expatriate | | Total | |
|---|---|---|---|---|---|---|
| | Male n (%) | Female n (%) | Male n(%) | Female n (%) | Spells n (%) | Sick-off days |
| 1 | 68 (67) | 36 (54) | 31 (58) | 107 (55) | 242 (58) | 242 |
| 2 | 27 (26) | 28 (42) | 19 (36) | 74 (38) | 148 (36) | 296 |
| 3 | 6 (6) | 3 (4) | 1 (2) | 8 (4) | 18 (4) | 54 |
| 4 | 1 (1) | | | | 1 (.25) | 4 |
| | | | | 2 (1) | 2 (.5) | 10 |
| 6 | | | | 2 (1) | 2 (.5) | 12 |
| 7 | | | 2 (4) | 1 (.5) | 3 (.75) | 21 |
| Total | 102 | 67 | 53 | 194 | 416 | 639 |

**Table 2b:**

| Spells of sickness absence | Saudi n (%) | Expatriate (%) | Male (%) | Female (%) | No of employees (%) |
|---|---|---|---|---|---|
| 1 | 136 (39) | 209 (61) | 125 (36) | 220 (64) | 345 (91.5) |
| 2 | 9 (32) | 19 (68) | 9 (32) | 19 (68) | 28 (7.5) |
| 3 | 3 (100) | 0 | 2 (67) | 1 (33) | 3 (1) |
| 6 | 1 (100) | 0 | 1 (100) | 0 | 1 (.25) |
| | **Total** | | | **377** | |

**Table-3: Distribution of spells and days-off attributed to each diagnostic group.**

| Cause | Sick-off days | | | | | | | Total Spells (%) |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Acute Upper respiratory infection | 143 | 96 | 5 | 1 | | | | 245 (59) |
| Chronic lower respiratory diseases | 2 | 6 | 2 | | | | | 10 (2.4) |
| Diseases of digestive system | 30 | 7 | 1 | | | | | 38 (9) |
| Diseases of the skin and subcutaneous tissue | 1 | | | | | | | 1 (.25) |
| Diseases of the musculoskeletal system and connective tissue | 27 | 24 | | | | | | 51 (12.2) |
| Diseases of the genitourinary disorder | 1 | | | | | | | 1 (.25) |
| Maternal disorders predominantly related to pregnancy | 1 | 1 | 1 | | | | | 3 (.75) |
| Chicken pox | 1 | | 2 | | 2 | 2 | 3 | 10 (2.4) |
| Diseases of the nervous system | 5 | 4 | 1 | | | | | 10 (2.4) |
| Diseases related to teeth and gum | 2 | | 1 | | | | | 3 (.75) |
| Diseases of the ear and mastoid process | 12 | 3 | | | | | | 15 (3.6) |
| Disorder of conjunctiva | 8 | 2 | 3 | | | | | 13 (3) |
| Stress related & somatoform disorder | | 1 | | | | | | 1 (.25) |
| Diabetes Mellitus | 5 | 2 | 1 | | | | | 8 (2) |
| Disorder of thyroid gland | 1 | | | | | | | 1 (.25) |
| General symptoms & signs | 3 | 2 | 1 | | | | | 6 (1.5) |
| **Total** | **242** | **148** | **18** | **1** | **2** | **2** | **3** | **416** |

of a spell was 1.54 days.

The probability of sickness absence was higher among the Saudis (14.15% Saudis versus 11% non-Saudis), and females (13.6% females versus 10.14% males). This indicated that the sickness absence was more likely to occur in Saudis (Odds ration = 1.33) and females (OR = 1.39).

The frequency of sick-off among Saudi and female employees was higher compared to the expatriate (0.16 Vs 0.12) and male (0.115 Vs 0.15) employees.

The mean spells of sick absence among the absentees was not significantly associated with gender (p = 0.335) or nationality (p = 0.086).

The index of severity among Saudi (0.233 Vs 0.191) and female (0.231 Vs 0.170) employees were higher compared to expatriate and male employees, indicating that the rate of sick-off duration was higher among Saudi and female employees. The index of severity was not associated with gender or nationality (p = > 0.05).

A total of 58% spells were attributed to the loss of one working day, 36% to 2 working days, 4% to 3 working days and only 2% spells to more than 3 working days. None of the absentees was absent for more than 7 days and only a small percentage (2%) of long-term absentees was found in the study. The main cause of longer spells of absence was chicken pox, which was only found in expatriates (Table-2a).

A total of 91.5% absentees were absent only once; 7.5% were twice; and only 1% were absent more than twice. Only 4 (1.25%) were heavy absentees according to the number of spells. All the heavy absentees were Saudis (Table-2b).

The average spells and days-off were attributed to each diagnostic group (Table-3).

## Discussion

Sickness absence is known to be an important cause of lost productivity and is increasingly considered to be a measure of health. The study was conducted to get an insight into the baseline information regarding the extent of this problem and its reasons, so that a preventive intervention could be recommended in the Riyadh-based hospital.

The overall prevalence rate of sickness absence in this study was higher (12 %) than in the same setting in the early 1990s (7.7% and 9%),[6,7] which could be due to the higher absenteeism among saudi employees, who are now in greater number than was the case in the early 1990s.

The number of Saudi employees was 477 in 1990, which increased to 1053 in 2007. On the other hand, the number of expatriates in 1990 was 2164, which was reduced in 2007 to 2064. The percentage of sickness absence among Saudi employees in 1990 was 8.8% and now it stands at 14.15%. The percentage of sickness absence among expatriates in 1990 was 16.5% and now it is 11%.[6,7]

The higher absence rate among the Saudis could be due to their pensionable appointments guided by different conditions of service.

According to the hospital regulations, Saudi employees could receive full pay annually for not more than 180 days of sick leave whereas non-Saudis could receive full pay for no more than 30 days.

A contract of non-Saudi employees is renewed annually on the basis of performance, assessed by the head of the department. Assessment also includes a review of the employee's health status, as well as sick absence days.

The apparent lower rates and smaller variability in the rate of sickness over time among expatriate employees could be a reflection of their attitude to work and an attempt to avoid administrative sanctions against the renewal of their contract from year to year.

The prevalence rate of sickness absence, however, was lower than that reported in similar studies from Lebanon,[14] Nigeria,[15] Malta[13] and Italy,[16] but was higher than in another study from Nigeria.[8] These findings could be due to different sets of policies related to sick-off days in different countries.

The duration (1.5 0.8 days) and frequency (1.1 spells per absentee) of sick-leave during the current study was lower than that in Malta,[13] Norway[17] and elsewhere.[18] It was lower than the two studies done in Nigeria.[8,15]

The higher rate of female absenteeism in the study was similar to the ones reported from the UK, Lebanon and elsewhere.[12,14,19,20] The higher rates of female absence in the current study could be due to the reasons other than illness or injuries. It could be to fulfill other family responsibilities related to the female gender such as caring for sick family members, marital as well as household responsibilities.

In this study almost all absentees had short-term sick leave, whereas reports from other studies are contrary to it.[13] Usually, long-term sick leave at King Khalid University Hospital is certified by a consultant from a sub-specialty clinic, which can be a tedious process. This could be the reason of the very low ratio of long-term sick-off or heavy absentees in the study.

The understanding of the reasons behind absence from work can help in preventing harmful events. Major diseases attributed to sickness absence in this study were similar to the pattern of diseases in earlier local studies[6,7] and also reported elsewhere.[12-14] The most common single disease observed in the study was acute upper respiratory infections, which could be occupationally related. It is also possible that in the dry, hot and dusty weather of Riyadh city, infectious organisms remain viable in dust over a long period

of time. The large number of the musculoskeletal problems in this study could be due to the faulty techniques during lifting, moving or changing the position of the patients. Diseases related to the digestive system in this study are also common in Saudi population due to the pattern of eating habits. Irritable bowel syndrome, which is highly prevalent in Saudi Arabia with moderate to severe abdominal cramps, was one of the main reasons for sickness absence in the study.[21-23]

One of the significant limitations of this study is that the records of sickness absence certified by any sub-specialty or emergency department of the hospital were not reviewed and the data was limited to the record of the EHC only. This may have excluded a significant number of hospital employees who received sick-off days through those sources.

## Conclusion

While some sickness absence is inevitable, good preventive measures addressing the relevant reasons could minimise the problem. The analysis and the detailed interpretation of sickness absence data in this study - perhaps the most comprehensive of its kind in Saudi Arabia - may be used to minimise occupational hazards in a health institution setting and to improve the working conditions of the employees and the smooth functioning of the services being provided by these employees.

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