Depression among Doctors Dealt with Accident and Trauma Cases in Abo Saleem Trauma Hospital in 2010

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ABSTRACT

Background and objectives. Depression is a common disease with substantial morbidity and mortality, it is often undiagnosed and under-treated. Physicians have a relatively high prevalence of depressive symptoms, and their emotional disturbances are often complicated by substance abuse. This study aimed to determine the frequency of depression and its severity among doctors dealt with trauma cases in Abo Saleem trauma hospital, and to find out the relation between age, medical specialty of interest, different level of seniority on junior doctors and night work shift duties per month, and the depression rate and its severity. Method: The study was a cross-sectional study involves 44 junior doctors’ dealing with trauma cases. they were working at different departments in Abo Saleem trauma hospital asked to answer a standard questionnaire in 1st of July 2010. The data was plotted in software programs “SSPS version 17. Results: The rate of depressed doctors was 68.18 %. The rates of mild, moderate and severe depression were 29.55 %, 27.27 % & 11.36 % respectively. Conclusion: In our study, there was correlation between PROMID-MD and BDI for screening of depression. In addition, there was statistically significant relation between depressions but not in its severity in both medical specialty of interest among physicians and seniority levels on junior doctors. In contrast, there was no statistically significant relation between age, marital status, experience, job specialty and night work shift duties per month; and depression rate and its severity. This finding underlines the importance of better support and more flexible arrangements at the workplaces, in order to ameliorate their emotionally disturbing working conditions.

Keywords: Depression, Medical Specialty of Interest, PROMID-MD, BDI.

INTRODUCTION

Depression is more common than any other disorder (with the exception of hypertension) [1]. While depression is a common disease with substantial morbidity and mortality, it is often undiagnosed and under-treated [1]. Annual economic consequences of depression have been estimated at 83 billion dollars in the United States and 11.5 billion euros in the United Kingdom [1]. A depressive disorder may begin at any age, but the average age at onset is the late 20s.
Psychosocial events or stressors may play a significant role in precipitating the first or second episode of Major Depressive Disorder (MDD), but may play little or no role in subsequent episodes [1]. Prevalence rates for MDD are unrelated to race, education, or income [1]. MDD is a mood disorder that recognizes as the most severe form of depression and characterized by at least 2 weeks of five or more of the following symptoms: (1) depressed mood; (2) loss of interest or pleasure in daily activities; (3) weight loss or gain; (4) insomnia or hypersomnia; (5) psychomotor agitation or retardation; (6) fatigue or loss of energy; (7) feelings of guilt or worthlessness; (8) inability to concentrate; and (9) thoughts of death or suicidal ideation.

Stress is a common element in emergencies, as shown by a study in which the only highly ranked source of stress resulting from residents’ direct clinical duties was the treatment of life-threatening illnesses [2]. Emergency department staff must continually distinguish between patients who are simply worried, those who have minor illnesses, those who are candidates for sudden deterioration and those who are critically ill [3]. Decisions are not easily reversible. The fear of making an irrevocable mistake is always present [4-5]. Many people who present at an emergency department are bypassing their own physicians in search of a secure hospital environment for immediate treatment [6-7]. Yet emergency medicine is becoming a more technical specialty, emphasizing critical care in the management of shock and trauma [8]. Emergency department staff will usually respond to burn out by working at their usual level or even harder when good sense and judgment indicate otherwise [9]. Most researchers have focused on tertiary interventions for physicians who are alcoholic, addicted to drugs, or emotionally or mentally unstable [10-11]. To minimize family and mental discord emergency department personnel should participate in relaxing and enjoyable activities that are unrelated to work [10]. Peer groups provide role models with whom to identify, receive feedback and encourage creative solutions to difficult situations. These groups can serve as a forum for ventilating about difficult problems, unexpected deaths and grief, thus reducing the health care worker’s need to block out such emotions. The feelings of guilt, shame or omnipotence are lessened, and morale is improved [12]. Within a 24-hour work period the level of performance peaks within 6 to 10 hours, then drops off to a low at about 22 hours. Thus, shifts of more than 12 hours, especially when associated with sleep and circadian cycle alterations, may lead to poor performance [13].

Physicians, as a group, deviate somehow from the norm when seeking treatment when they fall ill. They tend to diagnose and treat themselves and, if they do seek care, they often do not use the usual programs of the health service, but instead seek the advice of colleagues [14-15]. Physicians have a relatively high prevalence of depressive symptoms and their emotional disturbances are often complicated by substance abuse [16-18]. The suicide rate among doctors is higher than in other academic groups and in the general population [19-20]. Such disturbances, together with other mental disorders, require psychiatric and psychological treatment within an appropriate doctor-patient relationship [21]. Untreated mental health problems may negatively influence the quality of a physician’s work, thereby resulting in problems for patients, the health services and society [22].

Therefore, the current study aimed to determine the frequency of depression and its severity among doctors dealt with trauma cases in Abo Saleem trauma hospital, it also aimed to find out the relation between age, medical specialty of interest, different level of seniority on junior doctors and night work shift duties per month, and the depression rate and its severity.
METHODS

This study was a cross sectional study involves 44 junior doctors’ dealing with trauma cases. They were working in different departments in Abo Saleem trauma hospital asked to answer a standard questionnaire which contains a personal data and two well-validated self-reporting depression scales (PRIME-MD© & Beck Depression Inventory) in 1st of July 2010. PRIME-MD© is MDD is a mood disorders that recognized as the most severe form of depression and characterized It contains of two questions, if any answer will be yes. The final result will be that the person is suspected Case of depression. Beck depression inventory is self-reporting depression questionnaire to identify depression and its severity. It contains 13 questions, each one had four answers graded to scores (3, 2, 1, 0), the summation of scores of all questions will find out if the person is in high risk of depression or not and if the person is suspected depressed then it will help to find out the degree of its severity. The data was plotted in software programs “SSPS version 17, and was analyzed by chi square test and Mann-Whitney test. The P value considered significant if it is less than 0.05.

RESULTS AND DISCUSSION

The character of the doctors under the study

Table 1 shows the mean age of doctors dealt with trauma cases in Abo Saleem trauma hospital in 2010 was 29.86 years with standard deviation equal to 3.862 years. Furthermore, it shows that the mode and the medium age of them were 28 years old. In addition, the minimum age in this study was 26 years old and the maximum age was 42 years. All doctors were male in this study due to the very low percentage of female doctors in Abo Saleem trauma hospital, and all feminine doctors refused to answer the questioner due to their personal reasons. The percentage of single doctors was 81.82 %. On the contrary, the percentage of married doctors was 18.18 %. The single doctors in the study were about four times higher than joined in marriage doctors. The percentage of registrar level doctors was 22.73 %. In contrast, the percentage of senior house officer level of doctors was 77.27 %. The mean graduation year of doctors dealt with trauma cases in Abo Saleem trauma hospital was 2005±3.9 (ranging from 1992 to 2010). In this study, about half of doctors worked seven-night work shift duties per month. Approximately, one-fifth of the doctors worked five-night work shift duties per month. The mean night-work shift duties per month of doctors dealt with trauma cases in Abo Saleem trauma hospital was 6.58±1.8. And the mode and the medium night work shift duties per month of them were seven duties. In addition, the least night work shift duties per month in this study was four duties and the highest night work shift duties per month was 12 duties.

Table 1 The character of the doctors under the study

| Character                          | Frequency | Percentage |
|-----------------------------------|-----------|------------|
| Age                               |           |            |
| < 30 years                        | 25        | 56.81%     |
| ≥ 30 years                        | 19        | 43.19%     |
| Marital status                    |           |            |
| Single                            | 36        | 81.8%      |
| Married                           | 8         | 18.2%      |
| Seniority between junior doctors  |           |            |
| Registrar                         | 10        | 22.7%      |
| SHO                               | 34        | 77.3%      |
| Number of Years from graduation   |           |            |
| < 5 years                         | 28        | 63.63%     |
| ≥ 5 years                         | 16        | 36.37%     |
| Number of night work shift duties |           |            |
| < 7 NWSD                          | 18        | 40.9%      |
| ≥ 7 NWSD                          | 26        | 59.1%      |
| Job’s speciality: anesthesiology   | 1         | 2.3%       |
The highest percentage in job’s specialty was emergency medicine. Additionally, general surgeon had the second highest percentage. In this study, anesthetists, plastic surgeons and neurosurgeons had same percentage 2.27 %. In conclusion, the majority of this study was working in emergency medicine or general surgery. The highest percentage in medical specialty of interest of doctors in this study was general surgery. Doctors were not interested in any medical specialty had second highest percentage in this study. In addition, emergency medicine interested doctors had the third highest percentage. Both anesthesia and orthopedic surgery interested doctors had identical percentage 6.82 %. Similarly, both chest surgery and radiology interested doctors had equivalent percentage 4.55 %. The least specialty interested by doctors in this study was medicine.

**Prevalence of the depression and its severity**

Figure 1 demonstrate the distribution of depression and severity among doctors deal with trauma cases in Abo Saleem trauma hospital studied in 2010. The rate of depressed doctors was 68.18 %. The rates of mild, moderate and severe depression among doctors deal with accident and trauma were 29.55 %, 27.27 % & 11.36 % respectively.

![Figure 1 The distribution of depression and its severity among doctor's deal with trauma cases in Abo Saleem trauma hospital studied in 2010 by using Beck Depression Inventory (BDI)](image)

Table 2 demonstrates the correlation between PROMID-MD and BDI questioner screening tools of depression had been used among doctors deal with trauma cases in Abo Saleem trauma hospital studied in 2010. The depressed doctors had been matched in 93.5% of results from both questioner screening tools and non-depressed doctors had been matched in 92.3% of results from both questioner screening tools. There was considerable match between the results had been got from both questioner screening tools (PROMID-MD and BDI).

Table 2 PRIMED-MD versus BDI Cross tabulation

| PRIMED-MD | BDI |
|-----------|-----|
|            | No depression | Mild depression | Moderate depression | Severe depression | Total |
| Count      | 2       | 13              | 11               | 5                 | 31    |
| % within depressed | 6.5 % | 41.9 % | 35.5 % | 16.1 % | 100.0 % |
Factors affecting the depression rate and its severity

Table 3 describe factors affecting the depression rate and its severity among Participated doctors. The frequency of depression among doctors < 30 years old was slightly higher than ≥ 30 years-old. The mean BDI score for both groups were nearly the same and the P value was higher than 0.05. The frequency of depression among married doctors was higher than single doctors. The mean BDI score for married doctors was two scores higher than the single one and the P value was higher than 0.05. The frequency of depression among SHO doctors was higher than registrar doctors. The mean BDI score for registrar doctors was two scores lower than the SHOs and the P value was lower than 0.05. The frequency of depression among doctors with < 5 years’ experience was higher than ≥ 5 years’ experience. The mean BDI score for doctors with < 5 years’ experience was two scores higher than the doctors with > 5 years’ experience and the P value was higher than 0.05. The frequency of depression among doctors worked < 7-night work shift duties per month were lower than ≥ 7-night work shift duties per month. The mean BDI score for both groups were nearly the same and the P value was higher than 0.05. The result showed that all doctors worked in anesthesia; neurosurgery, orthopedic and plastic surgeries were depressed. Furthermore, the depression rate in doctors worked in general surgery, emergency medicine and chest surgery were 77.8%, 66.7% and 33.3% respectively. The highest mean BDI score was in both neurosurgery and plastic surgeon, and the lowest mean BDI score was in chest surgeon. The general surgeon and orthopedic surgeon nearly had equal score which was about eight. However, emergency physicians were lower than former one and it was around seven. The P value was higher than 0.05. The result showed that all doctors with no interest in any medical specialty were depressed. In contrast, doctors interested in chest surgery and medicine had no depression. Although, doctors were attentive in emergency medicine, general practice and general surgery had higher rates of depression (85.7 %, 80 % and 77 % respectively). Both anesthesia and orthopedic interested doctors had the same rate of depression 66.6 %. The highest mean BDI score were in doctors who interested in general practice, and the lowest mean BDI score was in doctors who interested in medical. The mean BDI score in doctors who interested in general surgery, anesthesia, none and emergency medicine were 8.8, 8, 7.4 and 6 respectively. The P value was lower than 0.05. There are several limitations in this study. Firstly, although Beck Depression Inventory (BDI) is not a diagnostic tool, it is often used as a screening instrument to identify individuals who are likely to be clinically depressed. And there were no results from the psychiatrist to confirm the results which we had got from (BDI). Secondly, all doctors in this study were male due to the very low percentage of female doctors in Abo Saleem trauma hospital, and all feminine doctors refused to answer the questioner due to their personal reasons. Also, the female gender was considered in most of previous studies had higher rate and severity of depression [1, 23].
Table 3 Factors affecting the depression rate and its severity.

| Character                          | Depression rate | P value* | Mean BDI score | P value* |
|-----------------------------------|-----------------|----------|----------------|----------|
| Age                               |                 |          |                |          |
| < 30 years                        | 72.0%           | 0.797    | 7.680          | 0.748    |
| ≥ 30 years                        | 68.4%           |          | 7.052          |          |
| Marital status                    |                 |          |                |          |
| Single                            | 69.4%           | 0.755    | 6.972          | 0.242    |
| Married                           | 75.0%           |          | 9.375          |          |
| Seniority between junior doctors  |                 |          |                |          |
| Registrar                         | 40.0%           | 0.016    | 5.900          | 0.302    |
| SHO                               | 79.4%           |          | 7.852          |          |
| Number of Years from graduation:  |                 |          |                |          |
| < 5 years                         | 75.0%           | 0.382    | 8.178          | 0.225    |
| ≥ 5 years                         | 62.5%           |          | 6.062          |          |
| Number of night work shift duties:|                 |          |                |          |
| < 7 NWSD                          | 72.2%           | 0.831    | 7.222          | 0.792    |
| ≥ 7 NWSD                          | 69.2%           |          | 7.538          |          |
| Job’s specialty                   |                 |          |                |          |
| anesthesia                        | 100.0%          | 0.609    | 6.000          | 0.757    |
| chest surgery                     | 33.3%           |          | 4.666          |          |
| emergency medicine                | 66.7%           |          | 7.037          |          |
| general surgery                   | 77.8%           |          | 8.222          |          |
| neurosurgery                      | 100.0%          |          | 13.000         |          |
| orthopedic surgery                | 100.0%          |          | 8.000          |          |
| plastic surgery                   | 100.0%          |          | 13.000         |          |
| Medical specialty of interest:    |                 |          |                |          |
| anesthesia                        | 33.3%           | 0.040    | 8.000          | 0.884    |
| chest surgery                     | 0.0%            |          | 4.000          |          |
| general surgery                   | 76.9%           |          | 8.846          |          |
| general practice                  | 80.0%           |          | 9.000          |          |
| medicine                          | 0.0%            |          | 3.000          |          |
| none                              | 100.0%          |          | 7.375          |          |
| orthopedic surgery                | 33.3%           |          | 6.333          |          |
| radiology                         | 50.0%           |          | 5.500          |          |
| emergency medicine                | 85.7%           |          | 6.000          |          |

* Mann-Whitney test - ** Chi square test.

Higher prevalence of depression was reported among different communities; however, very limited evidence is available on the psychological issues among health care providers in Libya. To the best of our knowledge, this is the first study in our country to assess the level of depression among junior doctors who dealt with accident and trauma cases. Especially in Abo Saleem trauma hospital which is considered a university teaching trauma care center in Libya and the junior doctors overloaded with accident and trauma cases due to lack of pre-hospital care from emergency medical system.

Jia-Na et al. 2010 showed that the prevalence of depressive symptoms among doctors was 65.3% in Chinese [24]. Others Study demonstrated that Prevalence of depression among medical students and resident physicians has been shown to be as high as fifteen to thirty percent [25]. Also, Leigh Kelley, eHow Contributor (2013) said that emergency room physicians have a high depression rate, which is about 30% more than any other specialty [26]. In this study, the rate of depression among doctors dealt with accident and trauma cases in Abo Saleem trauma hospital was 68.18%. This result was approximately as what was found in Chinese doctors in general and far away from what is found in American emergency room physicians in specific.

In 2007 Patti et al, revealed that the rates of mild, moderate and severe degree of depression were 22 %, 6 % & 2 % respectively among emergency physicians by using (PHQ-9) [27]. However, in this study, the rates of mild, moderate and severe degree of depression were 29.55 %, 27.27 % & 11.36 % respectively by using (BDI). Even with different screening tool was used in previous study; both had approximately same sensitivity and specificity. That makes the comparison from both screening tools acceptable. So, we noticed that there is a huge difference between prevalence of depression in both American emergency physicians and Libyan doctors dealt with accident and trauma cases, the latter group had higher rates for each grade of severity of depression.
As we thought, the rate of depression decreases with increasing the sense of self-satisfaction. In this study, there was statistically significant relation between different level of seniority on junior doctors (SHO, REGISTRAR) and depression rate but not with its severity. As we know, one of important symptoms in the depressed patient is loss of his or her interest. In this study, there was statistically significant relation between medical specialty of interest of doctors and depression rate but not with its severity. Theodore et al. 1993 reported that marriage was associated with lower levels of depressive symptomatology [28]. But in this study, marriage had opposite effect. A depressive disorder may begin at any age, but the average age at onset is the late 20s [1]. In contrast, this study demonstrates higher rate of depression in the late 20s among doctors in comparisons to the early thirty. But there was no difference in its severity between both groups. Finally, there was no statistically significant relation found between age, marital status, experience, job specialty and night work shift duties per month; and depression rate and its severity in this study.

CONCLUSION

In our study, the rate; the rate of depressed doctors was not less than 68.18 %. However, the rate of severe grade of depression is 11.36%. The rates of mild, moderate and severe depression were 29.55 %, 27.27 % & 11.36 % respectively. There was correlation between the results had been gotten from both questionnaire screening tools of depression (PROMID-MD and BDI). There was statistically significant relation between the seniority levels on junior doctors and depression rate but not in its severity. There was statistically significant relation between medical specialty of interest and depression rate but not in its severity. There was no statistically significant relation between age, marital status, experience, job specialty and night work shift duties per month; and depression rate and its severity. This finding underlines the importance of better support and more flexible arrangements at the workplaces, in order to ameliorate their emotionally disturbing working conditions.

Recommendations

Further studies with large sample size needed in this field; to find the real magnitude of depression among doctor in Abo Saleem trauma hospital. And, to find the relation between it and other factors that they really will effect on its rate and severity.

Because of the high rate of elevated depressive symptoms found among doctors dealt with trauma cases in Abo Saleem trauma hospital. It is strongly recommended that hospital manger, social worker, psychiatric doctors and occupational health department focus on identification of doctors who are at risk or in need of psychological assistance.

Conflict of Interest

The authors declare no conflict of interest.

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