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# Depression and Depressive Symptoms Among NCDs Patients Attending Primary Health Centers in Dubai, UAE 2014

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## Abstract

Depression is an important public-health problem and one of the leading causes of disease burden worldwide. Depression is often comorbid with other chronic diseases and can worsen their associated health outcomes. Few studies have explored the effect of depression, alone or as a comorbidity, on overall health status. The objective is to study the prevalence of depression and depressive symptoms among NCD patients attending PHC at Dubai Health authority facilities, Dubai, UAE; and to study the distribution of socio- demographic determinants of the NCD patient presented with depression or depressive symptoms and some associated risk factors. A cross-sectional study has been carried out among randomly selected sample of 306, both males and females (patients with different chronic diseases status attending primary health care facilities at Dubai health authority in Dubai for the year 2014. Sample size estimated using Epi–info software and was 306. Sample type was multistage stratified random sample with proportional allocations from different primary health care centers both in Diera and Bur Dubai sides. Interview administered questionnaire has been used for data collection (Depression Anxiety Stress Scales "DASS 21"). Data was analyzed using SPSS 21. The study showed that 18% of presented with mild depersive symptoms as detected by DASS, 15.4% of the study population have moderate depressive symptoms and 6.5% severe depressive symptoms and extremely severe depressive symptoms were among 7.2% The total depressive symptoms among patients with chronic diseases attaending PHC clinics was 48.2%. the study reflected that age factor has no significant association with depression, P Value= 0.498, the (odds ratio was 1.3270 (95% CI: 0.785-2.243). The (odds ratio of the effect of nationality factor on developing of depression among was 0.641 (95% CI: 0.369-1.114). The effect of marital status factor on developing depression among was not statistically significant P value= 0.42. Frequency rates of depression associated with chronic diseases are significantly high which reflected two direction effect. Some socio-demographic factors were shown to be playing significant role such as gender and nationality. depression intervention program needs to be developed to prevent two direction negative impacts and improve quality of life and over all life expectancy.

## Keywords

Depression, Depressive symptoms, NCD, PHC, Dubai

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## 1. Background

Depression is an important public-health problem, and one of the leading causes of disease burden worldwide. Depression is often comorbid with other chronic diseases and can worsen their associated health outcomes. Few studies have explored the effect of depression, alone or as a co-morbidity on overall health status. If occur among patients with chronic diseases,

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it adds a profoundly negative impact on quality of life and overall life expectancy. [1] It frequently occur as a co-morbidity, and relationships between both conditions are bidirectional. [2]

Some data suggest that the burden and emotional impact of managing a chronic disease like diabetes or asthma may lead to development of mental health problems such as depression. [3] Conversely, people with depression may develop behavioral factors that lead to an overall lack of self-care, thereby increasing the risk of developing chronic diseases. [4]

There is more than a threefold increase in the prevalence of depression in people with NCD. However, there is very limited data on the prevalence of co-morbid depression and chronic diseases in the UAE. [5]

If diabetes is caused or exacerbated by depression, then proper management of diabetes cannot exist without addressing depressive symptoms. Patients with NCD experiencing significant depressive symptoms are less likely to engage in diet and exercise recommendations than are those without depressive symptoms, and have lower medication adherence than non-depressed counterparts. [6] Comorbid depression profoundly impacts NCD self-management and treatment adherence, and is associated with significant risk of complications including stroke and myocardial infarction. Overall, comorbid depression in individuals with diabetes is associated with a 1.5-fold increase in mortality risk as compared with those without depression. [7] As such, co-management of diabetes and depression is critical. Programs have been established in high income countries to co-manage depression and diabetes, but such programs are virtually nonexistent in the UAE). [8]

Globally, mental illnesses such as depression have become an increasingly prevalent component of the overall burden of disease. [9] Depression is the second leading cause of disability in young to middle aged adults in low and middle income countries. [10] Despite this high burden and increasing global health care strain, limited infrastructure exists to confront these issues. In UAE, significant allocation of the cost of the national health care budget is directed toward mental health care. [11]

Generally, there is underdiagnosis of psychiatric illnesses among patients attending medical facilities. This calls for increased awareness among health care workers, as well as the use of screening tools that are quick and easy to use in busy clinical settings. [12] During the next decade, the greatest increases will occur in the WHO regions of Africa, South-East Asia and the Eastern Mediterranean (increases over 20%, compared to a global increase of 15%). Most non-communicable diseases have globalization, urbanization and ageing as underlying determinants; and unhealthy diet, physical inactivity and tobacco/alcohol as common risk factors. They also share intermediate risks like high blood sugar, raised blood pressure, overweight/obesity and abnormal blood lipids. “The two major inextricably related issues, aging and chronic disease, create challenges for public health and clinical care in settings already faced with scarce recourses” [13] Because they need costly prolonged treatment and care, non communicable diseases have social and economical consequences that affect individuals, households and the whole society. They raise the equity problem between and within countries. [14]

This study seeks to investigate the prevalence of depression among patients receiving care within a public sector of health care.

## 2. Objectives

1 To study the prevalence of depression and depressive symptoms among NCD patients attending PHC facilities at Dubai Health authority, Dubai, UAE

2 To study the distribution of socio- demographic determinants of the NCD patient presented with depression or depressive symptoms.

3 To study some associated risk factors

## 3. Methodology

A cross-sectional study has been carried out among randomly selected sample of 306 out-patients, both males (76) and females (222), and from adolescents, adults and elderly age groups. They were out-patients who have different chronic diseases status attending primary health care facilities at Dubai health authority in Dubai for the year 2014. Sample size was estimated using Epi–info software and selected bu multistage stratified random technique with proportional allocations from different primary health care centre both in Diera and Bur Dubai sides. Interview administered questionnaire has been used for data collection (Depression Anxiety Stress Scales “DASS 21”). Data was analyzed using SPSS 21.

## 4. Results

Table (1, 2, 3 and 4) showed age, sex, nationality and marital status distributions of the study participants. The figures reflected that females proportion was 72.5% while 27.8% were males. Regarding the nationality, 73.2% of the total study participants were UAE nationals while 22.5% were expatriates. About 49.3 of the study population was Married, 42.5 single, 2.3 Widowed and 2.6 divorced.

**Table 1.** Age distribution of the participants.

| | Frequency | % | Valid % | Cumulative % |
|---|---|---|---|---|
| Less than 20 | 50 | 16.3 | 18.5 | 18.5 |
| 20-29 | 90 | 29.4 | 33.3 | 51.9 |
| 30-59 | 120 | 39.2 | 44.4 | 96.3 |
| 60+ | 10 | 3.3 | 3.7 | 100.0 |
| Total | 270 | 88.2 | 100.0 | |
| Missing | 36 | 11.8 | | |
| Total | 306 | 100.0 | | |

**Table 2.** Sex distribution of the participants.

| | Frequency | Percent | Valid % | Cumulative % |
|---|---|---|---|---|
| Males | 76 | 24.8 | 25.5 | 25.5 |
| Females | 222 | 72.5 | 74.5 | 100.0 |
| Total | 298 | 97.4 | 100.0 | |
| Missing | 8 | 2.6 | | |
| Total | 306 | 100.0 | | |

**Table 3.** Nationality distribution of the participants.

| | Frequency | Percent | Valid % | Cumulative % |
|---|---|---|---|---|
| UAE nationals | 224 | 73.2 | 76.5 | 76.5 |
| Expatriates | 69 | 22.5 | 23.5 | 100.0 |
| Total | 293 | 95.8 | 100.0 | |
| Missing | 13 | 4.2 | | |
| Total | 306 | 100.0 | | |

**Table 4.** Marital status distribution of the participants.

| | Frequency | Percent | Valid % | Cumulative % |
|---|---|---|---|---|
| Single | 130 | 42.5 | 43.9 | 43.9 |
| Married | 151 | 49.3 | 51.0 | 94.9 |
| Divorced | 8 | 2.6 | 2.7 | 97.6 |
| Widowed | 7 | 2.3 | 2.4 | 100.0 |
| Total | 296 | 96.7 | 100.0 | |
| Missing | 10 | 3.3 | | |
| Total | 306 | 100.0 | | |

Table (5) showed that 18% of the study participants presented with mild depersive symptoms as detected by DASS, 15.4% of have moderate depressive symptoms and 6.5% have severe depressive symptoms. Extremely severe depressive symptoms were among 7.2%. The total depressive symptoms among patients with chronic diseases attaending PHC clinics was 48.2%

**Table 5.** Depression among PHC attendees as detected by DASS.

| Depression | Frequency | Percent | Valid % | Cumulative % |
|---|---|---|---|---|
| Normal | 154 | 50.3 | 51.7 | 51.7 |
| Mild | 55 | 18.0 | 18.5 | 70.1 |
| Moderate | 47 | 15.4 | 15.8 | 85.9 |
| Severe | 20 | 6.5 | 6.7 | 92.6 |
| Extremely Severe | 22 | 7.2 | 7.4 | 100.0 |
| Total | 298 | 97.4 | 100.0 | |
| Missing | 8 | 2.6 | | |
| Total | 306 | 100.0 | | |

Table (6) reflected that age factor has no significant association with depression among chronic diseases patients attending primary health care centers in Dubai, UAE, P Value =0.498

**Table 6.** Depression by age group among participants.

| | | Age group | | | Total |
|---|---|---|---|---|---|
| | | Adolescents | Adults | Elderly | |
| Normal | Count | 25 | 109 | 7 | 141 |
| | % | 50.0% | 52.4% | 70.0% | 52.6% |
| Depressed | Count | 25 | 99 | 3 | 127 |
| | % | 50.0% | 47.6% | 30.0% | 47.4% |
| Count | | 50 | 208 | 10 | 268 |
| % | | 100.0% | 100.0% | 100.0% | 100.0% |
| P value | | 0.498 | | | |

Table (7) revealed that the odds ratio (95% CI) of the effect of sex factor on developing depression among NCD patients attending PHC clinics in Dubai was 1.3270 (0.785-2.243).

**Table 7.** Depression by sex among participants.

| Depression | | sex | | Total |
|---|---|---|---|---|
| | | Males | Females | |
| Normal | Count | 43 | 109 | 152 |
| | % within sex | 56.6% | 49.5% | 51.4% |
| Depressed | Count | 33 | 111 | 144 |
| | % within sex | 43.4% | 50.5% | 48.6% |
| Total | Count | 76 | 220 | 296 |
| | % within sex | 100.0% | 100.0% | 100.0% |
| P value | | 0.000 | | |
| Odds ratio (95% CI) | | 1.327 (0.785-2.243) | | |

Table (8) revealed that the odds ratio (95% CI) of the effect of nationality factor on developing depression among NCD patients attending PHC clinic in Dubai was 0.641 (0.369-1.114).

**Table 8.** Depression by nationality among participants.

| | | Nationality | | Total |
|---|---|---|---|---|
| | | UAE nationals | Expatriates | |
| Normal | Count | 110 | 41 | 151 |
| | % | 49.3% | 60.3% | 51.9% |
| Depressed | Count | 113 | 27 | 140 |
| | % | 50.7% | 39.7% | 48.1% |
| Total | Count | 223 | 68 | 291 |
| | % | 100.0% | 100.0% | 100.0% |
| P value | | 0.000 | | |
| Odds ratio (95% CI) | | 0.641 (0.369-1.114) | | |

Table (9) revealed that the effect of marital status factor on developing depression among NCD patients attending PHC clinic in Dubai was not statistically significant P value =0.42.

**Table 9.** Depression by marital status among participants.

| | | Marital status | | | | Total |
|---|---|---|---|---|---|---|
| | | Single | married | divorced | widowed | |
| Normal | Count | 69 | 78 | 2 | 3 | 152 |
| | % | 53.5% | 52.0% | 25.0% | 42.9% | 51.7% |
| depressed | Count | 60 | 72 | 6 | 4 | 142 |
| | % | 46.5% | 48.0% | 75.0% | 57.1% | 48.3% |
| Total | Count | 129 | 150 | 8 | 7 | 294 |
| | % | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| P value | | 0.429 | | | | |

## 5. Discussions

Observations were available for 306 participants from 14 PHC centers in Dubai. Overall, one-year prevalence for depression was 48·2% (An average of 18% mild, 15.4% moderate, 6.5% severe and 7.2% extremely severe depressive symptoms) among participants with one or more chronic physical disease. This result was higher than the likelihood of having depression in the absence of a chronic physical disease. The prevalence of depression among NCD patients attending PHC in Dubai was high in all clinical presenting modalities (mild, moderate, sever and extremely sever), this results is higher than Mayo Clinic study [15] which reflected 27% among Diabetes, and up to 42% among cancers. It differs also from David M Clarke and Kay C Currie study. [16] The explanation for this outcome is the long term suffering of the patients concerning physical (pain and distress) or long term suffering seeking care and attending health care facilities.

The study revealed significant effect of gender determinants in developing depression among NCD patients which was similar to other study findings. [17, 18] The reason behind that may be related to the higher threshold of tolerability of the pain and hardness among male compared to females.

Nationality was found to be significant determinant precipitating to depression among NCD patients attending PHC which found to be similar to Katon WJ. [19] To interpreted this fact, we may say that expatriates living in other countries rather than their original home and this may add extra doses of their life which make them resist hardness.

Depression produces the greatest decrement in health compared with the chronic diseases angina, arthritis, asthma, and diabetes. The co morbid state of depression incrementally worsens health compared with depression alone, with any of the chronic diseases alone, and with any combination of chronic diseases without depression. These results indicate the urgency of addressing depression as a public-health priority to reduce disease burden and disability, and to improve the overall health of populations.

## 6. Conclusion

Frequency rates of depression associated with chronic diseases are significantly high which reflected two direction effect, some socio-demographic factors were shown to be playing significant role such as, gender and nationality. Depression intervention program targeting patients with NCDs needs to be developed to prevent two direction negative impacts and improve quality of life and over all life expectances.

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