

## **The Prevalence of Depression among Elderly Attending Daycare Centers**

Hessa Al-Dosseri, MD\* Amal Khalil, MD\*\* Sabreen Matoonq, MD\*\*  
Noora Al-Junaidi, MD\*\* Ghada Aldoy, MD\*\* Raouf Othman, MBBCh, MScGP, MHPE\*\*\*

**Objective:** To estimate the prevalence of depression among elderly attending Daycare centers.

**Design:** A Cross-Sectional Study.

**Setting:** Seven Daycare Centers, Bahrain.

**Method:** The study was performed from 11 July 2010 to 31 July 2010 in all Daycare centers in Bahrain. Five hundred Bahrainis aged 60 years and more attending the Daycare centers were included. The shorter version of the Geriatric Depression Scale (GDS-15) was used to screen for depression among the study participants.

**Result:** Five hundred elderly were registered in all Daycare centers; only 311 were present on the days of the study. Two hundred fifty-four participants agreed to take part in the study; one hundred and twenty-seven (50%) were females and one hundred and twenty-seven (50%) were males.

The mean age of respondents was 65.5 years (SD 4.6), the mean age of males was slightly higher than females, 106 (41.7%) of the respondents scored  $\geq 5$  on the depression scale.

Sixty (47.2%) of the female interviewees were more likely to be depressed than the males.

Illiterate respondents were more depressed than others. Respondents living alone were more likely to show depression than those living with a partner.

**Conclusion:** Depressive symptoms are prevalent among Bahraini elderly attending Daycare centers. Only female gender, illiterate and living with partners showed important predictors of depression, although with wide confidence interval. Further study should be undertaken with a larger sample, involving those elderly who did not attend the centers.

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\* Senior Resident FPRP, BDF Hospital  
\*\* Senior Resident FPRP, Primary Health Care Centers  
\*\*\* Consultant Family Physician  
Assistant Professor, Arabian Gulf University  
Ministry of Health  
Kingdom of Bahrain  
Email: doctorbahrain@gmail.com

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## **INTRODUCTION:**

Depression is a mental illness in which a person experiences severe feeling of unhappiness and disappointment accompanied with changes in appetite, disturbance in sleep, lack of concentration, fatigue and lack of interest in usual activities that were pleasurable. Depression may change a person's feeling, behavior and thoughts, which may lead to suicide. Many factors can increase the risk of depression i.e. genetics, exposure to stressful events in life and medications<sup>1</sup>.

Depression in elderly can be easily missed because it coexists with multiple medical disorders and physicians looking after an elderly person are mostly preoccupied with chronic disorders. Moreover, depression causes more burdens on the life of an elderly person and may increase risk of death from these disorders. Elderly are more susceptible to depression due to loss of social support, death of a spouse, retirement, or relocation of residence<sup>2</sup>.

Depression among elderly can be estimated by using the geriatric depression scale which was found to be reliable and valid<sup>3</sup>.

In 2008, a study conducted among elderly attending primary health care centers in Bahrain showed that depressive symptoms are highly prevalent among elderly<sup>4</sup>. The study concluded that Daycare centers have no effect on client anxiety, depression or functional status. Furthermore, no evidence of burden on the cost of health services was revealed<sup>5</sup>.

A case-controlled prospective study in San Francisco found no relation between adult day health center (ADHC) participation and health-related quality of life<sup>6</sup>.

Daycare centers are established to provide health and social programs for elderly attendee during the day. These programs aim to strengthen the relationship between the elderly and their family members and not to be a burden. Daycare centers offer rehabilitation programs, social interaction with peers and participation in campaigns, meals and physical activities. It is a chance to socialize and have fun in a community based group<sup>7</sup>.

There are seven Daycare centers distributed in the Kingdom of Bahrain. These centers are open five days per week, five hours a day and some open for two shifts, morning and evening. The age ranges from 40 and above; members are admitted by a social worker or through submitting a formal request to join the home.

The aim of this study is to assess the prevalence of depression among the elderly attending the daycare centers and to improve the overall care of the elderly attending the daycare centers.

## **METHOD**

The study was performed from 11 July 2010 till 31 July 2010. The target group was all attendees at the Daycare centers who are 60 years and above. The official number registered in all Daycare centers is 500, but only 311 were present on the designated days of the study (57 of them refused to be included in the study). Verbal consent was taken from the candidate before the interview.

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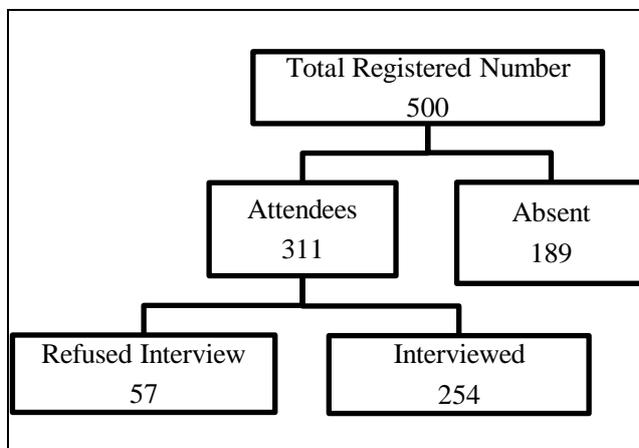
The Geriatric Depression Scale (GDS) questionnaire, validated and recommended by WHO (Arabic & English version) was used to assess the prevalence of depression among elderly. It is a 15-item informant version of GDS, which has sufficient internal consistency reliability ( $\alpha=0.66$ ) and retest reliability ( $r=0.81$ ) to support its use as a research and clinical instrument<sup>8</sup>.

Efficacy of the GDS-15 is considered similar to the full 30-item informant version of the GDS<sup>3</sup>. In the current study, the Cronbach alpha coefficient was 0.681 suggesting fair internal consistency reliability for the scale with this sample. Values above 0.7 are considered acceptable; however, values above 0.8 are preferable. The questionnaire consists of 15 items with a dichotomous response of “yes” or “no”. A score of 0-4 is considered ‘normal’ and a score above 5 is considered ‘depressed’. Personal data and information about the elderly medical history, gender, level of education, types of diseases, marital status and type of living situation were added.

Binary logistic regression was performed with depression (depression score  $\geq 5$ ) as the dependent variable; sex, education, partners, chronic disease and marital status were considered as independent variables. Binary logistic regression analysis yielding odd ratios with 95% confidence intervals to estimate the unadjusted association of each variable with depression. SPSS version 16 was used for data analysis.

## RESULT

Three hundred eleven were present on the day of the study, 254 (81.7%) participants agreed to take part in the study, see figure 1.



**Figure 1: Population of the Study**

The mean age of respondents was 65.5 (SD 4.6), the mean age of males was slightly higher than females 66.7, see table 1. Male and female respondents were equally represented. Greater numbers were represented by Riffa 75 (29.5%) and Yoko 59 (23.2%). The majority of the interviewed were married, 166 (65.4%). Seventy-two percent of the residents are illiterate or has primary education. Of the 254 residents, 82.7% lived with their children. Eighty seven percent of the sample had chronic disease. One hundred and six (41.7%) scored  $\geq 5$  on the depression scale.

**Table 1: Personal Characteristics of the Respondents (n=254)**

Demographic Data		Number and Percentage
Day care centers	Yoko	59 (23.3%)
	Almuharraq	17 (6.7%)
	Almanar	33 (13.0%)
	Sitra	27 (10.6%)
	Boori	19 (7.5%)
	Umalhassam	24 (9.4%)
	Riffa	75 (29.5%)
	Total	254 (100%)
Gender	Male	127 (50.0%)
	Female	127 (50.0%)
	Total	254 (100.0%)
Marital status	Single	3 (1.2%)
	Married	166 (65.4%)
	Widowed	75 (29.5%)
	Divorced	10 (3.9%)
	Total	254 (100.0%)
Educational level	Illiterate	97 (38.2%)
	Primary	85 (33.5%)
	Secondary	34 (13.4%)
	College degree	14 (5.5%)
	Intermediate	24 (9.4%)
	Total	254 (100.0%)
Chronic disease	DM	123 (48.4%)
	HTN	147 (57.9%)
	IHD	47 (18.5%)
	Lipids	84 (33.1%)
	Others	76 (29.9%)
	Total	477*
Depression	Depression $\geq$ 5	106 (41.7%)
Age	Mean (SD)	65.5 (4.6%)
	Male n=127	66.7 SD (5.1)
Gender (mean age)	Female n=127	64.4 SD (3.6)

\*Some elderly had more than one chronic disease

Significantly, 47.2% of female interviewees were more likely to be depressed than the males (36.2), OR1.6; (95% CI, 0.96-2.6;  $p < 0.05$ ). Moreover, widows and living alone showed greater level of depression than others, see table 2.

**Table 2: Risk Factors for Depression in Elderly Attending Day Centers**

Variables		Presence of Depression Number (%)	Crude OR	95% CI for OR		Significance
				Lower	Upper	
<b>Gender</b>	Male	46 (36.2)	1	-	-	-
	Female	60 (47.2)	1.6	0.96	2.6	0.05
<b>Marital status</b>	Divorced	3 (30.0)	1	-	-	NS
	Single	1 (33.3)	1.2	0.07	18.3	NS
	Married	62 (37.3)	1.4	0.35	5.6	NS
	Widow	40 (53.3)	2.7	0.6	11.1	NS
<b>Education level</b>	College	2 (14.3)	1	0.03	2.3	-
	Intermediate	8 (33.3)	3.0	0.54	16.8	NS
	Secondary	13 (38.2)	3.7	0.7	19.3	NS
	Primary	37 (43.5)	4.6	0.98	21.95	NS

	Illiterate	46 (47.4)	5.4	1.42	25.5	0.05
<b>Lives alone</b>	No	95 (40.4)	1	-	-	-
	Yes	11 (57.9)	2.0	0.78	5.2	NS
<b>Lives with partner</b>	Yes	61 (37.2)	1	-	-	-
	No	45 (50.0)	1.7	1.0	2.8	0.05
<b>Lives with children</b>	Yes	84 (40.0)	1	-	-	-
	No	22 (50.0)	1.5	0.8	2.9	NS
<b>Lives with others</b>	Yes	8 (38.1)	1	-	-	-
	No	98 (42.1)	1.2	0.5	2.95	NS
<b>Chronic disease</b>	Yes	11 (33.3)	1	-	-	-
	No	95 (43.0)	1.5	0.7	3.3	NS

Illiterates were more depressed than others. Chronic diseased individuals are less depressed than those who are not.

## DISCUSSION

This is a first study conducted in Bahrain to assess the prevalence of depression among DCC attendees. The prevalence of depression was 41.7% using GDS-15; the result is similar to other studies. A study using GDS-15 questionnaires, 45% suffered from depressive symptoms (36% moderate, 9% severe)<sup>9</sup>. In Japan, among 1,409 elderly from Daycare centers, depression assessed by short version GDS-15 was found to be 57.2%<sup>10</sup>.

Our sample was represented by equal number of sexes; this was unusual because our expectation that the male's attendance will be more due to the cultural barriers and domestic chores.

The females in our study are more depressed than males; this may be due to females who are more emotionally expressive and report higher levels of positive and negatives emotions. In a Greek study, depressive symptoms were more frequent in women than men (54.6% vs. 37.4%)<sup>9</sup>. In another study, 60% of females were depressed compared to 52% of males, which is comparable to our study result<sup>11</sup>.

Although not significant, the illiterate people were more depressed than others because the person who cannot read or write will face a lot of difficulties in life, reading the instructions on the roads, malls and medications instruction. Elderly people living alone are more depressed than others who live with partners, children or caregivers.

Respondents with chronic disease were less likely to be depressed than those without chronic disease. It could be due to regular visits to the health centers. Furthermore, it encourages social interaction with their family physician and others who have similar illness. In a study, prevalence of depression was found to be significantly higher among those with chronic disease, which is not similar to our result<sup>4</sup>.

### **Weakness of the study:**

1. Not all the registered residents were interviewed because some of them were absent.
2. In our research, we used a questionnaire with yes or no answer which may be not expressive; also the interview was conducted by different doctors, which may cause bias.

3. The finding cannot be generalized to all the elderly in Bahrain because it included the elderly attending DCC only.
4. The questionnaire is designed as clinic screening tool not for research.

### **Strengths of the study:**

1. The response rate from the attendees was very good.
2. The research included the entire daycare centers in Bahrain.

### **CONCLUSION**

**The attendees in the Daycare centers showed high rate of depression. Females, illiterate and living with partner are important predictors of depression. Further study is advised with a larger sample and approaching the elderly at home for interview and the use of the 30-item questionnaire which should be modified to suit our culture. We would like to emphasize the importance of detecting depression symptoms in this age group by their family physician and family member.**

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**Competing Interest:** None.

**Sponsorship:** None.

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**Ethical Approval:** Approved by Primary Care Research Committee, MOH, Bahrain.

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