Depression in caregivers of patients having dementia before and after a psychoeducational course, Cairo

Samah H. Rabei

Department of Psychiatry, College of Medicine, Helwan University, Helwan, Egypt

Correspondence to Samah H. Rabei, MD Psychiatry, 5 Omroo Alkays St, 7th District, Nasr City, Cairo, 11727, Egypt; Tel: +20 220 803 146; e-mail: samahrabe@yahoo.com

Received 8 March 2016
Accepted 28 November 2016

Egyptian Journal of Psychiatry
2017, 38:65–69

Background
The efficacy and effectiveness of family psychoeducation as an evidence-based practice have been established. Systematized use of family psychoeducation in routine clinical practice is alarmingly limited worldwide and in Egypt.
Aim
This study aimed to assess the degree of depression in caregivers of patients having dementia before and after an intensive psychoeducational course with skill-training tailored and modified to suit their emotional and behavioral needs.
Participants and methods
Fifty caregivers of dementia patients in the Geriatrics Department Outpatient Clinic, Ain Shams University, Cairo, were assessed after written informed consent had been obtained from them. A score equal to or below 24/30 on the mini-mental state examination (MMSE) and International Classification of Disease, version 10, criteria were used to diagnose dementia patients. The activity of daily living (ADL) scale was also used and scored. The caregivers were assessed before and after a psychoeducational course using Beck's depression inventory II. Their occupational level was described as per the family socioeconomic scale. Statistics were analyzed using SPSS (version 16).
Results
Caregivers experienced a reduction in Beck's depression inventory II score. The average decrease was 3.6 points after psychoeducation.

There were correlations and associations between decrease in depression scores after psychoeducation and age and occupation of caregivers, higher MMSE scores, and lower ADL impairment in patients with dementia.
Conclusion
Psychoeducation improves depression scores more in young working caregivers of patients with dementia with higher MMSE and lower ADL impairment.

Keywords:
caregivers, dementia, depression

Egypt J Psychiatr 38:65–69

1110-1105

Background

Caring for a mentally ill relative or loved one can be rewarding; yet, it imposes considerable burden on the caregiver (Substance Abuse and Mental Health Services Administration, 2009). Caregivers are referred to as 'hidden victims', overlooked and untreated. Prevalence rates for depressive symptoms among caregivers of persons with dementia are reported to range from 28 to 55%. Memory function is not the main feature. Rather, personality and behavioral changes cause the most concern. A stressed caregiver is more likely to institutionalize the care recipient, which is often a very stressful process for both the patient and the caregiver. Three patient factors were found to have a strong association with caregiver depression: (a) depression in the dementia patient; (b) activity of daily living (ADL) functional scores of 12 or greater; and (c) the presence of hallucinations. Three caregiver factors – female sex, older age, and poorer health status – were found to have a strong association with caregiver depression. Caregivers have poorer immune responses to viral challenges, slower rates of wound healing, and higher levels of plasma insulin compared with age-matched controls, and are at a greater risk for developing mild hypertension and have increased risk for all-cause mortality (Shah and Wadoo, 2010).

The term 'psychoeducation' was first used by Anderson *et al.* (1980) and was used to describe a behavioral therapeutic concept consisting of four elements: briefing the patients about their illness, problem-solving training, communication training, and self-

 DOI: 10.4103/1110-1105.209683

assertiveness training, whereby relatives were also included (Anderson *et al.*, 1980). Family psychoeducation is an evidence-based practice (Dixon *et al.*, 2001).

An 8-week course, the START (STrAtegies for RelaTives) program, providing education, stress relief, and emotional support for dementia caregivers is a proven cost-effective program to reduce anxiety and depression (Livingston, 2014). Social support was found to mediate depression in caregivers (Shah and Wadoo, 2010). Cognitive-behavioral family intervention can have significant benefits in caregivers of patients with dementia and has a positive impact on patient behavior (Marriott *et al.*, 2000).

Among caregivers with depressive symptoms, 19% used antidepressants and 23% used antianxiety drugs (Sleath *et al.*, 2005). The use of herbal products/supplements was found in 18% of elderly subjects with depression and/or dementia and in 16% of their caregivers (Kales *et al.*, 2004).

The Draft National Service Framework for Wales (2005) points to the vulnerability of caregivers and states that specialist services for people with dementia should include interventions for caregivers, such as structured advice/training, counseling services, or short breaks (Shah and Wadoo, 2010).

Participants and methods

Participants

Inclusion criteria

Fifty caregivers of patients with dementia in the Geriatrics Department Outpatient Clinic, Ain Shams University, Cairo, were recruited.

The inclusion criteria for dementia patients were as follows:

(1) A score below 24/30 on the mini-mental state examination (MMSE).
(2) Fulfilling the criteria of the International Classification of Disease, version 10, symptom checklist for dementia.

ADL questionnaire was used to assess these patients.

Caregivers of dementia patients had to fulfill the following to be eligible for recruitment:

(1) The criteria for depression on a psychiatric interview using the International Classification of Disease, version 10, symptom checklist, with no report of a past history of depressive episodes.
(2) Score positively on Beck's depression inventory II (BDI-II).

The occupational levels of caregivers were determined as per the family socioeconomic scale.

Ethical considerations

Confidentiality of the patients was assured. Written informed consent was taken from patients and caregivers before participation. The aim and procedures of the study were explained to them. There was no moral or financial pressure laid on them to participate. Results of the study are planned for scientific publication that serves and improves policies and plans affecting their quality of life.

Procedures

Psychoeducational program: over 4 weeks, four meetings were held with caregivers of dementia patients (2 h duration each).

A booklet of 50 pages was prepared in Arabic language as a course material.

Targets and activities of each meeting are summarized in the following table.

Meetings	Target		Activities
	Knowledge	Skills	
1	Symptoms: Aging and dementia: cognitive, emotional, behavioral, and functional deterioration	Communication skills: Cognitive errors neutralization	Debate (normal aging and dementia): 45 min Short lecture: 30 min Role play: 45 min
2	Etiology: Brain changes: genes and environment	Crisis management ABC	Brain storming (why)Short lecture Workshop (how)
3	Treatment: medications, side effects, compliance	Problem solving: memory aids, cognitive stimulation, emotional enrichment	Case discussion Short lecture Role play
4	Rehabilitation: ADL, day hospital, home nurse	Grieving and burnt out caregiver: resources and support groups	Short lecture <ST>Discussion (ventilation) Concluding

Statistics were analyzed using SPSS (IBM, USA) (version 16).

Results

Sample description

Caregivers

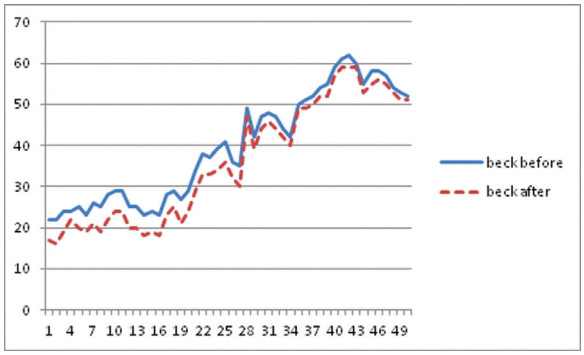
(1) Ages ranged from 32 to 66 years, with an average of 49 years.
(2) The percentage of female caregivers in the sample was 56%, whereas the percentage of male caregivers was 44%.
(3) Sixty-two percent were married, 24% were divorced, and 14% were single.
(4) Twelve percent were in level 3 occupations, 14% were in level 4 occupations, 28% were in level 5 occupations, and 46% were in level 6 occupations.
(5) Thirty percent were wives, 32% were sons, 26% were daughters, and 12% were cousins (Fig. 1).

The average decrease in depression score was3.6 points.

Patients

(1) The percentage of female patients in the sample was 48%, and the percentage of male patients was 42%.
(2) Patient ages ranged from 64 to 88 years, with a mean of 77 years.
(3) Thirty-six percent were married and 64% were widowed.
(4) MMSE scores ranged from 12 to 24, with an average of 19.2.
(5) ADL scores ranged from 28 to 78% impairment, with an average of 48%.
(6) Forty-two percent were mixed dementia, 24% were Alzheimer's, 16% were Parkinson's dementia, 16% were Pick's dementia, and 2% were pseudodementia.

Figure 1



Depression scores on Beck's depression inventory II among caregivers before and after psychoeducation. Continuous blue line: before psychoeducation; interrupted red line: after psychoeducation.

Associations and correlations

There is a significant inverse correlation between decrease in depression scores on BDI-II before and after psychoeducation and age of caregivers (Table 1).

There is almost no significant association between the decrease in depression scores on BDI-II before and after psychoeducation and caregivers' sex (Table 2).

There is a nonsignificant negative association between the decrease in depression scores on BDI-II before and after psychoeducation and caregivers' marital state (it is best in singles, followed by married and finally divorced caregivers) (Table 3).

There is a significant positive association between decrease in depression scores on BDI-II before and after psychoeducation and higher occupational levels (Table 4).

Table 1 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in correlation to age of caregivers (Pearson's correlation)

Correlations	Caregiver age	Decrease in Beck's score
Caregiver age		
Pearson's correlation	1	−0.833**
Significance (two-tailed)		0.000
N	50	50
Decrease in Beck's score		
Pearson's correlation	−0.833**	1
Significance (two-tailed)	0.000	
N	50	50

**Correlation is significant at the 0.01 level (two-tailed).

Table 2 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in association with sex of the caregivers (Mann–Whitney)

Ranks				
	Caregiver sex	*N*	Mean rank	Sum of ranks
Decrease in Beck's score	1	22	25.73	566.00
	2	28	25.32	709.00
	Total	50		

Test statistics[a]	Decrease in Beck's score
Mann–Whitney *U*	303.000
Wilcoxon's *W*	709.000
Z	−0.101
Asymptotic significance (two-tailed)	0.919

[a]Grouping variable: caregiver sex. 1=0.01; 2=0.06.

Table 3 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in association with marital state of caregivers (Kruskal–Wallis)

Ranks			
	Caregiver marital state	*N*	Mean rank
Decrease in Beck's score	1	7	32.79
	2	33	26.86
	3	10	15.90
	Total	50	

Test statistics[a,b]	Decrease in Beck's score
χ^2	6.865
d.f.	2
Asymptotic significance	0.032

1, single; 2, married; 3, divorced. aKruskal–Wallis test. bGrouping variable: caregiver marital state.

Table 4 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in association with occupational level of caregivers (Kruskal–Wallis)

Ranks			
	Caregiver occupational level	*N*	Mean rank
Decrease in Beck's score	3	6	10.00
	4	7	13.93
	5	14	27.14
	6	23	32.07
	Total	50	

Test statistics[a,b]	Decrease in Beck's score
χ^2	17.272
d.f.	3
Asymptotic significance	0.001

aKruskal–Wallis test. bGrouping variable: caregiver occupational level. 3=0.03; 4=0.001; 5=0.06; 6=0.01.

There is a nonsignificant association between decrease in depression scores on BDI-II before and after psychoeducation and dementia type (it is best in pseudodementia, followed by Alzheimer's, mixed, Parkinson's, and finally Pick's) (Table 5).

There is a significant correlation between decrease in depression scores on BDI-II before and after psychoeducation and MMSE score (Table 6).

There is a significant negative correlation between decrease in depression scores on BDI-II before and after psychoeducation and ADL impairment score (Table 7).

Table 5 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in association with type of dementia in patients (Kruskal–Wallis)

Ranks			
	Dementia type	*N*	Mean rank
Decrease in Beck's score	1	21	26.02
	2	12	32.00
	3	8	24.38
	4	8	14.00
	5	1	37.50
	Total	50	

Test statistics[a,b]	Decrease in Beck's score
χ^2	8.742
d.f.	4
Asymptotic significance	0.068

Dementia types: 1, mixed; 2, Alzheimer's; 3, Parkinson's; 4, Pick's; 5, pseudodementia. aKruskal–Wallis test. bGrouping variable: dementia type.

Table 6 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in correlation to mini-mental state examination score (Pearson's correlation)

Correlations	Decrease in Beck's score	MMSE
Decrease in Beck's score		
Pearson's correlation	1	0.704**
Significance (two-tailed)		0.000
N	50	50
MMSE		
Pearson's correlation	0.704**	1
Significance (two-tailed)	0.000	
N	50	50

MMSE, mini-mental state examination. **Correlation is significant at the 0.01 level (two-tailed).

Table 7 Decrease in depression scores on Beck's depression inventory II before and after psychoeducation in correlation to activity of daily living score (Pearson's correlation)

Correlations	Decrease in Beck's score	ADL
Decrease in Beck's score		
Pearson's correlation	1	–0.796**
Significance (two-tailed)		0.000
N	50	50
ADL		
Pearson's correlation	–0.796**	1
Significance (two-tailed)	0.000	
N	50	50

ADL, activity of daily living. **Correlation is significant at the 0.01 level (two-tailed).

Discussion

In this study, there was a decrease in scores of depression on BDI-II among caregivers after psychoeducation. Psychoeducation improves depression among caregivers of patients with dementia. This agrees with the findings of Marriott *et al.* (2000) and Livingston (2014).

In this study, there was a significant inverse correlation between decrease in depression scores on BDI-II before and after psychoeducation and

age of caregivers. Caregivers' ages ranged from 32 to 66 years. Although there was almost no significant association between the decrease in depression scores on BDI-II before and after psychoeducation and caregivers' sex, male caregivers tended to respond slightly better to psychoeducation. Shah and Wadoo (2010) found a strong association with caregiver depression and female sex and older age.

There was a nonsignificant negative association between the decrease in depression scores on BDI-II before and after psychoeducation and caregivers' marital status in this study (it is best in singles, followed by married and finally divorced caregivers). Further, there was a significant positive association between decrease in depression scores on BDI-II before and after psychoeducation and higher occupational levels. Role engulfment is common among caregivers because they no longer have the time or energy to engage in other activities (Shah and Wadoo, 2010).

There was a nonsignificant association in this study between decrease in depression scores on BDI-II before and after psychoeducation and dementia type (it is best in pseudodementia, followed by Alzheimer's, mixed, Parkinson's, and finally Pick's). Pick's dementia has personality changes. Mixed dementia and Parkinson's are associated with motor impairment. Draper (2004) states that caregivers realize the demands upon them in the moderate stage of illness. Memory function is not of concern as a personality and behavioral change (Draper, 2004). There is a significant correlation, in this study, between decrease in depression scores on BDI-II before and after psychoeducation and MMSE score.

There was a significant negative correlation between decrease in depression scores on BDI-II before and after psychoeducation and ADL impairment in this study. This agrees with the results of Shah and Wadoo (2010) who found a strong association with caregiver depression and ADL functional scores.

Limitations and recommendations

The study did not receive funding to extend the sample to a wider range of institutes and cover a wider geographical area. The following is recommended:

(1) Further research to explore ways of improving psychoeducation and social support to families of psychiatric patients.
(2) Stressing on the value of psychoeducation and social support, and training medical and psychiatry students to practice it efficiently.
(3) Increasing public awareness about the need and value of psychoeducation and social support.
(4) Addressing policymakers to fund research and training and offer psychoeducation and social support to patients and their families.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

Anderson C, Gerard E, Hogarty G, Reiss DJ (1980). Family treatment of adult schizophrenic patients: a psycho-educational approach. Schizophr Bull 6:490–505.

Dixon L, McFarlane W, Lefley H, Lucksted A, Cohen M, Falloon I, *et al.* (2001). Evidence-based practices for services to families of people with psychiatric disabilities. Psychiatr Serv 52:903–910

Draper B (2004). Dealing with dementia: a guide to Alzheimer's disease and other dementias. Crows Nest, NSW: Allen & Unwin.

Kales HC, Blow FC, Welsh DE, Mellow AM (2004). Herbal products and other supplements: use by elderly veterans with depression and dementia and their caregivers. J Geriatr Psychiatry Neurol 17:25–31.

Livingston G (2014). Course for dementia carers reduces anxiety and depression in the long term. Copenhagen: Alzheimer's Association International Conference (AAIC).

Marriott A, Donaldson C, Tarrier N, Burns A (2000). Effectiveness of cognitive-behavioral family intervention in reducing the burden of care in carers of patients with Alzheimer's disease. Br J Psychiatry 176:557–562.

Shah AJ, Wadoo O (2010). Depression in carers of patients with dementia. http://priory.com/psych/carerdep.html. [Last accessed 2016 Jan].

Sleath B, Thorpe J, Landerman LR, Doyle M, Clipp E (2005). African-American and white caregivers of older adults with dementia: differences in depressive symptomatology and psychotropic drug use. J Am Geriatr Soc53: 397–404.

Substance Abuse and Mental Health Services Administration (2009). Family psycho-education: the evidence. HHS Pub. No. SMA-09-4422. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.