

LIFE EVENTS AND DEPRESSION IN ELDERLY

NIRUJ AGRAWAL & H.P.JHINGAN

ABSTRACT

Thirty-one elderly depressive patients (diagnosed as suffering from depressive episode or recurrent depressive disorder according to I.C.D.- 10 diagnostic criteria for research) attending psychiatry O.P.D. or geriatric clinic at the All India Institute of Medical Sciences, New Delhi (AIIMS) and thirty-one elderly nonpsychiatric patients, attending geriatric clinic at AIIMS were subjected to a semi structured interview to gather information regarding life events. It was found that the elderly depressed patients experienced significantly higher number of stressful life events as compared to the control group. The stressful life events were specifically more in the females, those with low 'per capita income', and those who perceived crisis in the family.

Key words: Life-events, depression, elderly

Old age is a time of losses. It is the stage of life when an individual gradually or suddenly loses his physical vigor, physiological resources of body functions, occupation, friends, spouse and may be independence. These life events keep on occurring continuously in the life of an old person. If and when these stresses become too severe or too numerous they may affect the physical and/or psychic equilibrium producing maladaptive patterns of adjustment including physical and mental disorders especially depression. It is also known that life events cause depression in only those who are predisposed to develop depression. Life events either aggravate or precipitate the depression. An accumulation of various events in succession may also produce a non specific vulnerability for the development or precipitation of various disorders including depression. A number of studies have revealed a clustering of

events during the period preceding the onset of depression in their group of depressive patient compared with control (Forest et al., 1965; Hudgens et al., 1967; Paykel et al., 1969; Brown et al., 1973; Patric et al., 1978). Given a pause between the events, the individuals may adapt to the event; but a quick succession of events prevents coping (Birchnell, 1970; Birley and Brown, 1970; Paykel et al., 1971; Venkoba Rao & Nammalavar, 1978).

Nanko & Demura (1993) investigated the relationship of life events to the onset of depression. They indicated that life stress in general played an important role among women in the onset of depression and that undesirable events and problems of work specifically play a role in the onset of depression. However, critics of life events research have pointed out that the magnitude of the effect of events on the causation

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of depression may be quite small (Paykel et al., 1969).

The extent to which stressful life events precipitate depression in old age is uncertain; clinically a loss of some kind seems a frequent precedent but research findings are ambiguous. Murphy (1982) found that 48% of depressed patients in the hospital setting and 68% of depression subjects in the community had experienced a severe life event in the year preceding onset, compared with 23% of the normal group from the community. The severe life events that were more common in depressed subjects were the death of a spouse or child, serious physical illness, life threatening illness to some one close, severe financial loss and enforced changed of residence as a result of a demolition programme. Major social difficulties lasting 2 or more years were also significantly associated with depression. Barnes and Wise (1991), in a study of three generations, found that there was an interaction between life events and depression for young adults but not for either of the older groups consisting of parents and grand parents.

To sum up, life events have been correlated with onset or precipitation of various physical and psychiatric disorders. Life events have also been found to be clustered before the onset of depression. Recent reports suggest that stress plays an important role in timing of onset of depressive episodes. However, data on elderly is scanty and not conclusive. In order to plan mental health services and preventive mental health strategies for the elderly, it is important to understand various factors associated with various mental disorders, especially depression. One of the important factors associated with depression is "life-events" because the impact of life-events can be minimized by various methods including stress management techniques. Moreover, there is no such study from India, where the proportion and the number of elderly in the population are rising rapidly. Hence it was decided to study the life events before the onset of depression in elderly. The objectives of the study were to (i) compare the stressful life events experienced by the elderly

depressed patients with those experienced by the control group and (ii) study the life events in the elderly depressed patients on the basis of various sociodemographic, psychological and clinical variables.

MATERIAL AND METHOD

Thirty-one elderly (aged 60 years or more) depressive patients attending psychiatry O.P.D. or geriatric clinic at the All India Institute of Medical Sciences, New Delhi (AIIMS), fulfilling inclusion and exclusion criteria, were included in the study over a period of 1-1/2 years. Those belonging to either sex, and diagnosed as suffering from depressive episode or recurrent depressive disorder according to I.C.D.-10 diagnostic criteria for research (WHO, 1992), were included. Those with a score of 5 or less on "elderly cognitive assessment questionnaire" (ECAQ) (Kua and Ko, 1992), first episode of the disorder occurring before 60 years of age, drug or alcohol dependence, less than primary education and those who were not co-operative, were excluded.

Thirty one elderly (aged 60 years or more) patients, belonging to either sex, attending geriatric clinic at AIIMS but clinically not found to be suffering from any psychiatric disorder, were included as control group for the study. Spouses or first degree relatives of patients in the study group and patients with a score of 5 or less on ECAQ, score of more than 10 on "geriatric depression scale" (GDS) (Yesavage et al., 1983), drug or alcohol dependence, any other clinically diagnosable psychiatric disorder and less than primary education were excluded.

Informed consent was taken from all the subjects in the study group as well as control group prior to inclusion in the study. Then all the subjects in both the groups were assessed for various sociodemographic details with a structured proforma. Information was also obtained on any physical illness that the subjects had. Semi structured interview was conducted to gather information regarding life events by using life events list (LEL) (Saxena et al., 1983). Actual

occurrence of life events was corroborated from the spouses or the other family members accompanying the patients. Life events were recorded for the last six months irrespective of the duration of the disease.

ECAQ was developed to screen for cognitive impairment among the elderly people in developing countries by Kua & Ko (1992). ECAQ was derived from items in the mini mental status examination and geriatric mental status schedule as these questionnaires may not be applicable in the developing countries because of low level of literacy and cultural differences. The questionnaire consists of 10 items grouped under 3 categories- memory (3 items), orientation (6 items) and memory recall (1 item). Each item has a weightage of one mark for correct response. Maximum possible score is 10. Score of 5/6 is taken as cutoff point i.e. a score of 5 or less indicates cognitive impairment. It has a sensitivity of 85.3% , specificity of 91.5%, positive predictive value of 82.8% and overall miscalculation rate of 10.5%.

GDS was specifically designed to measure depression in the elderly primarily as a screening instrument. It is a self-administered questionnaire consisting of 30 items. Every item has a dichotomous response - yes/no. Of the 30 items, 20 indicate the presence of depression when answered positively and are given a score of one if the response is "yes". The other 10 items (1,5,7,9,15,19,21,27,29 and 30) indicate depression when answered negatively and are given a score of 1 when the response is 'no'. A score of 0-10 indicates absence of depression and score of more than 10 possible depression. It has a sensitivity of 84% and specificity of 95%. It is also applicable in screening depression in physically ill and cognitively impaired elderly people. It is more sensitive as a screening instrument for elderly than Hamilton rating scale for depression.

LEL was constructed by identification of available lists/schedules to suit the cultural need of Indian population. It consists of 44 events. Overall reliability of this list was 86.8%. Events are not weighted for stressfulness in LEL because

perceived stressfulness may differ from person to person (Saxena et al., 1983).

The case group and the control group were matched for age by using student's t test and for sex by using the Pearson's chi square test. The two groups were also compared on other sociodemographic, clinical and psychosocial variables by using Pearson's chi square test. The two groups were also compared for the life events score by using student's t test. Subjects with less number of life events (0-2) were compared with subjects having high number of events (>2) by using chi square test with Yate's correction. Life events were also compared between study and control groups with respect to various sociodemographic, clinical and psychosocial subgroups by using modified t test.

RESULTS

The study group and the control group were well matched for age and sex. Mean age for the study group was 66.10 years (± 6.39) and that for the control group was 65.71 years (± 5.04). In the study group, 15(48.4%) patients were male and 16(51.6%) were females whereas in the control

TABLE 1
LEL SCORE DISTRIBUTION

LEL Score Group	Case Group		Control Group	
	n	%	n	%
0-2	19	61.3	28	90.3
>2	12	38.7	3	9.7

$\chi^2=5.628$ (with yates correlation),df=1,p=.0177*

*significant

group, 16(51.6%) were male and 15(48.4%) were females. Most of the subjects in the study group (90.3%) as well as the control group (96.8%) came from urban areas. In the study group, 25(80.6%) were married and 6(19.4%) were widowed whereas in the control group, 20(64.5%) were married, 10 (32.3%) were widowed and 1(3.2%) was

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unmarried. The differences between the two groups on marital status were not statistically significant. Majority of the subjects in the study group (61.3%) as well as the control group (54.8%) had no income of their own and the differences between the two groups were statistically not significant. A greater proportion of subjects in the study group came from nuclear family (61.3%) whereas greater proportion of subjects in the control group came

TABLE 2
LEL SCORE SEX SUB GROUP

Sex Groups	Case Group		Control Group	
	N	Mean±SD	N	Mean±SD
Male	15	2.13±1.80	16	1.56±0.89
		t(Modified)=1.10, p=0.28		
Female	16	1.81±1.32	15	1.00±0.75
		t=2.11 p=.045*		

*significant

from joint family (64.5%) and this difference between the two groups was statistically significant ($X^2 = 4.13$; $df = 1$; $p = 0.042$). In both the groups, majority (80.6% each) of the subjects had at least one family member available 24 hours at home. The two groups did not differ significantly

TABLE 3
LEL Score Per capita income subgroups

Per capita Income	Case Group		Control Group	
	N	Mean±SD	N	Mean±SD
Low (≤ Rs.900)	16	2.13±1.40	14	1.28±0.99
		t(modified)=2.47, p=0.020*		
High	15	1.53±1.64	17	1.29±0.77
		t(modified)=0.52, p=0.611*		

*significant

in the subjects' perception of family support. The perception of family support in the study group was good for 15 subjects (48.4%), fair for 9(29.0%)

TABLE 4
STUDY OF LIFE EVENTS IN THE CASE GROUP ON THE BASIS OF VARIOUS SOCIO-DEMOGRAPHIC, PSYCHOLOGICAL AND CLINICAL VARIABLES

Variables	n	Mean±SD	Modified t-test
Sex			
Males	15	2.1±1.8	t=0.56, p=0.580
Females	16	1.8±1.3	
Age			
60-64	15	2.3±1.8	t=1.02, p=0.315
≥ 65	16	1.7±1.3	
Marital status			
With spouse	25	2.0±1.6	t=0.06, p=0.953
Without spouse	6	2.0±1.4	
Education			
≤Primary	16	2.2±1.3	t=0.80, p=0.432
>Primary	15	1.7±1.8	
Occupation			
Working	10	2.2±1.6	t=0.56, p=0.584
Not Working	21	1.9±1.6	
Monthly income			
Not earning	19	2.0±1.6	t=0.14, p=0.888
Earning	12	1.9±1.6	
Per capita income			
≤900	16	2.4±1.4	t=1.53, p=0.138
>900	15	1.5±1.6	
Type of family			
Joint	12	1.7±1.0	t=-0.97, p=0.341
Nuclear	19	2.2±1.8	
Own Property			
Yes	20	2.0±1.5	t=-0.08, p=0.437
No	11	2.0±1.8	
Physical illness			
Yes	21	1.8±1.6	t=-0.83, p=0.414
No	10	2.3±1.5	
Crisis			
Yes	13	2.7±1.6	t=2.61, p=0.015*
No	18	1.4±1.3	
Availability of family members			
Yes	25	1.9±1.6	t=0.66, p=0.531
No	6	2.3±1.5	
Perception of family support			
Poor	16	1.9±1.6	t=0.11, p=0.89
Good	15	2.0±1.6	
Depression			
Mild	15	1.9±1.7	t=0.34, p=0.734
Moderate/ Severe	16	2.1±1.5	

*significant (p<0.05)

and poor for the other 7(22.6%) whereas in the control group, 22 subjects (70.9%) perceived good

family support, 7(22.6%) perceived fair support and 2(6.5%) perceived poor family support.

In the study group, 15(48.4%) had mild depression, 13(41.9%) had moderate depression and only 3(9.7%) had severe depression.

Mean life event list score (LEL score) was statistically significantly ($p < .05$) higher in the study group (1.97 ± 1.55) as compared to the control group (1.29 ± 0.86). Higher proportion of subjects in the study group had high LEL score (>2) as compared to the control group (Table 1) and this difference was statistically significant.

Both male as well as female subjects in the study group had higher mean LEL score than the respective subjects in the control group but the difference was statistically significant only for the females (Table 2). LEL scores of subjects in the study group were compared with those in the control group with respect to age groups (60-64 and >64), marital status (with spouse and without spouse), educational status (primary and more than primary), occupational status (working and not working), type of family (nuclear and joint), ownership of property (yes and no), monthly income (earning and not earning), per capita income (low and high), crisis (presence and absence), perception of family support (good and not good) and '24 hours availability of a family member' (yes and no) but the differences were statistically significant only for the low per capita income group (Table 3).

With in the study group, LEL scores were compared between various subgroups based on sociodemographic, psychological and clinical variables (Table 4). Only those who had crisis in the family had significantly higher mean LEL score than those without crisis.

DISCUSSION

This study was undertaken to determine association of stressful life events with depression in elderly. It was a cross-sectional hospital based study with a case control design. The sample consisted of consecutive elderly depressed patients. The patients were not evaluated for

vascular depression because this concept (Alexopoulos et al., 1997) had not been put forth much until after the completion of this study. However, those with cognitive impairment were ruled out by ECAQ, which is a valuable screening instrument for developing countries (Kua & Ko, 1992). Patients were screened for depressive illness by GDS, which is a very good screening instrument for the elderly (Yesavage et al., 1983).

Life events were measured by administering LEL, which is suitable, sensitive as well as specific, for Indian population (Saxena et al., 1983). The case and control groups were comparable with regard to age, sex, place and setting of origin, marital status, monthly income, 24 hour availability of family members and patient's perception of family support and the differences were not statistically significant. This eliminated chances of these variables confounding the life events score. Perception of family support was found to be poorer in the case group as compared to the control group though the difference was not significant. However, perception of family support in the case group may have been coloured by depression.

A greater proportion of case group subjects reported some crisis in the family as compared to controls. This is not surprising as crisis imposes more stress and hence there may be more chances of developing depression. However, it may also be partly because of the depression colouring their perception. Within elderly depressive patient group, mean LEL scores were found to be significantly higher in patients with perception of crisis as compared to those with perception of no crisis. This suggested that significantly higher perception of crisis in depressed patients was not just because of their disease status and low mood but also because of higher number of stressful life events experienced by them.

In the case group, mean LEL score was significantly higher than the control group. Significantly higher percentage of the elderly depressive patients (38.7%) had higher scores on LEL as compared to nonpsychiatric elderly

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patients (9.7%). This finding was in line with the findings of Murphy (1982) but not in keeping with the findings of Barnes and Wise (1991), who found that there was no interaction between life events and depression in the elderly.

Mean LEL score was higher in male as well as female case group subjects as compared to respective control groups though the difference was significant only for the female subgroup. Such gender differences in the association of life events and depression are not reported in the literature. Mean LEL score was significantly higher in elderly depressive with low 'per capita income' as compared to controls and patients with low 'per capita income' had more life events than those with higher 'per capita income' though not at a statistically significant level. Effect of socioeconomic parameters on the life events experienced by the elderly depressed subject is not reported in the literature. It is possible that those with low 'per capita income' are more prone to experience life events.

Most of the patients in our study had mild (48.4%) or moderate (41.9%) depression, probably because the study was conducted in the outpatient setting. Severity of depression was not found to be associated with significantly higher life events, which showed that the life events are associated with occurrence of depression and not its severity. This is in consonance with the existing literature (Satija et al., 1998).

There are several limitations on the generalization of our findings. The sample size would have been ideally larger to enhance the statistical power in assessing various associations. The sample was derived from tertiary care hospital and hence the sample is not representative of the community at large.

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