

THE ASSOCIATION OF POOR ECONOMIC CONDITION AND FAMILY RELATIONS IN CHILDHOOD WITH LATE-LIFE DEPRESSION

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received: 20.3.2012;

revised: 11.3.2013;

accepted: 17.6.2013

SUMMARY

Background: Late-life depression encompasses both patients with late-life onset of depression (>60 years) and older adults with a prior and current history of depression. The aim of the study was to analyze the impact of the economic condition and family relations in childhood as risk factors for late-life depression.

Subjects and methods: This was an analytical cross-sectional study comprising 120 subjects, 60 patients with unipolar depression and 60 subjects without depressive disorders, diagnosed in accordance with the 10-th International Classification of Mental and Behavioural Disorders. All participants in the study were above the age of 60 and there was no significant statistical difference in the sex proportion in both groups ($p > 0.05$). Data for the examination were taken from a self-reported questionnaire designed for our aim. The Geriatric Depression Scale was used to measure depressive symptoms.

Results: Our results have shown that severe financial difficulties are important events in childhood and are risk factors for depression in the elderly (Chi-square=12.68, $df=2$, $p=0.0018$). Our investigation has found the association of family relations with late-life depression. In fact, conflictual relations in the family were more common in the experimental group than in the control group (Chi-square=14.32, $df=3$, $p=0.0025$). Furthermore, father's addiction to alcohol in childhood was associated with depression in later life ($p=0.013$). The difference in childhood emotional neglect and unequal treatment between siblings in both groups was insufficient to be confirmed statistically, but the examinees with this trauma had a threefold higher chance of having depression later in life (Odds ratio=3.04, 95% CL 0.92 < OR < 10.65; Yates chi-square=3.2, $df=1$, $p=0.07$). Subjects who have estimated their mother ($p=0.019$) or father ($p=0.046$) having negative personal character traits had a significantly greater risk for development of late-life depression.

Conclusions: Negative socio-economic circumstances as well as family conflicts during childhood are associated with late-life depression. Father's addiction to alcohol and parents' negative personal character traits are associated with depression in the elderly.

Key words: late-life depression - older adults - risk factors - family relations - psychosocial risk factors

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INTRODUCTION

Late-life depression encompasses both patients with late-life onset of depression (over the age of 60 years) and older adults with a prior and current history of depression (Blazer 2003).

Depression is not an inevitable outcome of aging, but is a disorder of the brain that arises in the context of the medical illnesses and psychosocial stressors that accompany aging. Depression often goes unrecognized and untreated (Egede 2007, Stojanović-Špehar et al. 2010), leading to poor quality of life for older adults, increased medical comorbidity, decreased ability to live independently, caregiver burden, and heightened mortality. Suicide is a particularly devastating consequence of depression that disproportionately affects older adults. Fortunately, safe and effective treatments for depression and sociality are available. The pathophysiology of late-onset depression is not fully understood and is likely to be quite heterogeneous. Genetic factors, aging- and disease-related processes, and psychosocial adversity contribute to physiological changes that cause depress-

sion. Childhood abuse and neglect, as well as the cumulative load of stressors over a lifetime have both been associated with late-onset depression. Cognitive-behavioral models of depression posit that depression is a behavioral response to repeated stressors and that cognitive distortions (i.e. negative thoughts) contribute to and perpetuate depressed mood (Halverson et al. 2010).

Vaillant et al. (2001) reported that until now, prospective studies of aging have begun with 50-60-year-olds, not at an earlier age. Premature death, childhood variables, and alcohol abuse have been often ignored, as has successful aging. They suggested that "good" and "bad" aging from age 70 to 80 could be predicted by variables assessed before the age of 50. If some variables were under some personal control, depression was the only uncontrollable predictor variable that affected the quality of subjective and objective aging.

Kajantie (2008) in his study said that during the last two decades, a considerable body of evidence has emerged showing that circumstances during the fetal period and childhood may have lifelong programming

effects on different body functions with a considerable impact on disease susceptibility. Korkeila et al. (2005) reported that childhood adversities had been associated with adulthood depressiveness, but the contribution of adult risk factors has seldom been described. Childhood adversities were consistently associated with depressiveness. The findings emphasize the importance of early risk factors when identifying persons at risk of depression.

Neurobiological studies have demonstrated that childhood maltreatment may alter brain development by programming the glucocorticoid, noradrenergic and vasopressin stress response systems to over-react to new stressors, thus rendering the individual increasingly vulnerable to psychiatric disorder (Shea 2005). Further studies examining possible biological correlates of the impact of adverse childhood events, such as persistence of abnormal basal cortisol levels and elevated ACTH response, as observed in cohorts of abused children, may provide further validation of self reported adversity and support for the hypothesis that childhood abuse leads to permanent structural and functional changes of the nervous system (Tarullo 2006). Ritchie et al. (2009) noted that neurobiological and clinical studies suggest that childhood maltreatment may result in functional and structural nervous system changes that predispose the individual to depression. This vulnerability appears to be modulated by a polymorphism in the serotonin gene-linked promoter region (5-HTTLPR). Clinical studies of adult populations suggest that gene-environment interaction may diminish with aging. Karg et al. (2010) also found evidence that the studies published to date support the hypothesis that 5-HTTLPR moderates the relationship between stress and depression.

The aim of this study was to analyze the impact of poor economic conditions and family relations in childhood as risk factors for late-life depression.

SUBJECTS AND METHODS

The investigation was carried out at the Department for Geriatric Psychiatry of the Psychiatric Hospital Skopje. This was an analytical cross-sectional study of the case-control type. A total of 120 older adults divided into two groups were included in this study. The first experimental group comprised 60 patients (45 females and 15 males) suffering from unipolar depression in late life, diagnosed in accordance with the 10-th International Classification of Mental and Behavioural Disorders diagnostic criteria, without a history of other psychiatric disorders or dementia. The other was the control group of 60 community-dwelling older adults (42 females and 18 males) without a history of depressive symptoms or other psychiatric disorders or dementia. All participants in the study were above the age of 60.

None of the included subjects in the study declared any physical, sexual or emotional abuse in young age.

Data for the examination were taken from a self-reported questionnaire designed for the aim of the

examination. The Geriatric Depression Scale was used to measure depressive symptoms. Outcome measure was a score of >10 on the 30-items Geriatric Depression Scale.

Statistical analysis

The statistical analysis comprised: percentages, Kolmogorov-Smirnov test, odds ratio, χ^2 test, Fisher's exact test. The levels of probability for achieving the zero hypotheses in accordance with the international standards of the biomedical sciences were 0.05 and 0.01.

RESULTS

There was no significant statistical difference in the sex proportion in both groups ($p>0.05$). The mean age of the patients was 70.43 \pm 6.63 years; and of the control subjects 71.12 \pm 6.49 years. T-test for independent samples was used for detecting the difference in the mean age between the two groups. Values of $p>0.05$ ($p=0.56$) were considered to be statistically insignificant, i.e. the examinees did not differ significantly by age.

The mean score in the Geriatric Depression Scale of the experimental group was 24.08 \pm 3.67, whereas of the control group 3.67 \pm 3.09, for the t-value of 23.92 and $p=0.00000$. The scores in the Geriatric Depression Scale revealed a statistically significant difference between the experimental and control groups.

Table 1 shows the results of the financial situation of the families in childhood in both groups. Forty percent of the patients with depressive disorders in late life stated that there were severe financial difficulties or poverty during childhood, compared to 11.67 % in the control group. Subjects with poor financial situations during childhood had a significantly greater risk for development of late-life depression ($p<0.01$) (Chi-square=12.68, $df=2$, $p=0.0018$) (Table 1).

Distribution according to "whom the subjects grew up with" showed that the category "with both parents" was found in the highest percentage in both the group of patients (80%) and in the control individuals (73%). The difference was not statistically significant between the experimental and the control groups (Kolmogorov-Smirnov $D_{max} = -0.067$, $p>0.05$) (Table 2).

Table 3 presents the subjects in both groups in relation to separation/no separation of the parents and reasons if they were separated. There was no statistically significant difference regarding this issue. The reason why the parents were separated was also not significant for both groups (Yates chi-square=0.35, $df=1$, $p=0.55$; Kolmogorov-Smirnov $D_{max}=0.05$, $p>0.05$) (Table 3).

The relations in the family of the subjects during childhood in both groups are presented in Table 4. The distribution of examinees in the experimental and in the control groups with regard to family relations had confirmed a statistically significant difference for $p<0.01$

Table 1. Distribution of socioeconomic conditions in childhood between the experimental group and the control group

Financial conditions in childhood	Experimental group		Control group	
	N	%	N	%
Good	10	16.67	13	21.67
Middle	26	43.33	40	66.67
Poor	24	40.00	7	11.67
Total	60	100	60	100

Chi-square=12.68, df=2, p=0.0018

Table 2. Distribution of examinees by data whom they had grown up with

Grown up with...	Experimental group		Control group	
	N	%	N	%
Both parents	48	80.00	44	73.33
Father	1	1.67	1	1.67
Mother	9	15.00	11	18.33
Other member of family	0	0.00	1	1.67
Other persons or institution	1	1.67	1	1.67
Father and other family member	0	0.00	2	3.33
Father and institution	1	1.67	0	0.00
Total	60	100	60	100

Kolmogorov-Smirnov Dmax=-0.067, p>0.05

Table 3. Separated/nonseparated parents and reasons if separated

Reasons if the parents were separated	Experimental		Control group	
	N	%	N	%
Not separated	45	75.00	42	70.00
Death of father or mother	10	16.67	14	23.33
Severe illness of father or mother	0	0.00	2	3.33
Divorce of parents	1	1.67	1	1.67
Home abandonment	1	1.67	0	0.00
Other (job, work)	3	5.00	1	1.67
Total	60	100	60	100

Yates chi-square=0.35, df=1, p=0.55; Kolmogorov-Smirnov Dmax=0.05, p>0.05

(Chi-square=14.32, df=3, p=0.0025). In fact, conflictual relations in the family were more common for the patients in the experimental group (35%) against those in the control group (11.67%). The majority of the patients with family conflicts explained that poor socioeconomic conditions and poverty caused such situations in the family. Some of them thought that the father's addiction to alcohol was one of the reasons for such relations (Table 4).

Data given in Table 5 show the history of the father's alcohol abuse. Alcoholism was present in 10% of patients in the experimental group as compared to zero percent in the control group with a statistically significant difference of p=0.013. Thus, it can be concluded that father's alcohol abuse in childhood was associated with depression in later life (Table 5).

As presented in Table 6, the difference in relation to the feeling of emotional neglect in childhood and feeling of unequal treatment between siblings was insufficient to be confirmed statistically. However the examinees with this psychological trauma in childhood had a threefold increased risk of having depression in later life (Odds ratio=3.04, 95% CL0.92 < OR<10.65;

Yates chi-square=3.2, df=1, p=0.07). The Kolmogorov-Smirnov test also did not confirm a significant difference related to emotional neglect and unequal treatment of the siblings (Dmax=0.13, p>0.05) (Table 6).

Table 7 shows the opinion of the personality characteristics of the mother given by the subjects from both groups. 21.67% of the patients from the experimental group thought that the mother had negative personal character traits against 5% of the subjects in the control group. Subjects who estimated the mother's personality being negative had a significantly greater risk for development of late-life depression (Chi-square =7.89, df=2, p=0.019). They had 5.09 times significantly higher risk of becoming ill from late-life depression compared to those whose mother had positive personality characteristics (Odds ratio=5.09, 95% CL1.24< OR 24.09) (Table 7).

Table 8 presents data of subjects in both groups about the personality characteristics of the father. 31.67% of the patients from the experimental group thought that the father had negative personal character traits, against 15% of the control subjects. Regarding the appearance of depression in the elderly, negative

personal character traits of the father compared with positive ones 2.39 times increased the risk for depression (95%CL 0.89<OR<6.53), which was statistically significant (Chi-square=6.15, df=2, p=0.046) (Table 8).

The investigation about the reasons why subjects felt the personal character traits of their parents were

negative showed that most of the examinees associated them with strict behavior, i.e. they lived with authoritarian parents. They reported the acceptance of an authoritative parenting style but not an authoritarian style. At the same time 10% of the patients from the experimental group had experience with the negative behavior of their father due to his addiction to alcohol.

Table 4. Family relations in childhood

Family relations in childhood	Experimental group		Control group	
	N	%	N	%
Harmonious	7	11.67	20	33.33
Tolerant	31	51.67	33	55.00
Cold	1	1.67	0	0.00
Conflict	21	35.00	7	11.67
Total	60	100	60	100

Chi-square=14.32, df=3, p=0.0025

Table 5. Distribution of father's addiction to alcohol

Father's addiction to alcohol	Experimental group		Control group	
	N	%	N	%
None	54	90.00	60	100
Alcoholism	6	10.00	0	0
Total	60	100	60	100

Fisher exact p=0.013

Table 6. Distribution of feeling of emotional neglect and unequal treatment between siblings in the group of patients with depression and the control group

Feeling of emotional neglect and unequal treatment between siblings	Experimental group		Control group		
	N	%	N	%	
Yes	From father	8	13.33	5	8.33
	From mother	2	3.33	0	0.00
	Other family members	1	1.67	0	0.00
	From father and mother	2	3.33	0	0.00
No	47	78.33	55	91.67	
Total	60	100	60	100	

Odds ratio=3.04, 95%CL0.92<OR<10.65; Yates chi-square=3.2, df=1, p=0.07; Dmax=0.13, p>0.05

Table 7. Personality characteristics of the mother

Personality characteristics of the mother	Experimental group		Control group	
	N	%	N	%
Negative	13	21.67	3	5.00
Positive	46	76.67	54	90.00
Can't answer	1	1.67	3	5.00
Total	60	100	60	100

Odds ratio=5.09, 95%CL1.24<OR<24.09; Chi-square=7.89, df=2, p=0.019

Table 8. Personality characteristics of the father

Personality characteristics of the father	Experimental group		Control group	
	N	%	N	%
Negative	19	31.67	9	15.00
Positive	38	63.33	43	71.67
Can't answer	3	5.00	8	13.33
Total	60	100	60	100

Odds ratio=2.39, 95%CL 0.89<OR<6.53; Chi-square=6.15, df=2, p=0.046

DISCUSSION

Despite evidence that stress exposure earlier in the life course may have long-term consequences for psychopathology, most models of vulnerability for late-life depression are limited to current stressors or to retrospective reports of stress history (Kasen et al. 2010). Comijs et al. (2007) investigated whether persons who had experienced childhood adversity were more likely to develop depressive symptoms when faced with recent events. 14.4% of the sample experienced adverse events during childhood and 35.4% experienced recent events. Associations of depressive symptoms were found with both childhood adversity and recent life events. They have discussed that underreporting may be present due to unwillingness to report embarrassing events or to disclose painful memories. In our study we found no data for severe childhood adversities such as physical, sexual or emotional abuse in childhood, maybe due to the same reasons as Comijs have stated, because some of the patients did not want to remember any embarrassing events. We found emotional neglect and feelings of unequal treatment between siblings during childhood. This unequal treatment was present and a common issue in our cultural behavior in the past, when boys were favored over girls. The emotional neglect during childhood threefold increased the risk of onset of late-life depression, but with no statistically significant difference between the experimental and the control groups. In addition, Simeon (2006) in a study of adults with major depression compared with healthy controls reported that greater depression severity at baseline was associated with childhood emotional abuse. Kaplan & Klinetob (2000) reported that, compared with a small sample of adult outpatients with treatment-responsive depression, those with treatment-refractory depression reported histories of greater emotional abuse. There is a growing body of research providing evidence for the long-standing clinical wisdom that trauma history is associated with more treatment-refractory depressions.

A study by Surtees et al. (2006) combining childhood and adult life events in a sample with an age range of 41-80 years, found a strong relationship between childhood events and recent episodes of major depression.

Kraaij et al. (2001) suggested that negative life events may have long-term consequences on people's well-being. Depressed mood at old age was related to the reporting of negative socio-economic circumstances as well as emotional abuse and neglect during childhood. It is suggested that incorporating life histories into the diagnostic interview is advisable. In our results the difference of socio-economic circumstances between the two groups was statistically proven, and thus, we agree with Kraaij's statements that negative socio-economic circumstances are an important risk factor for depression in older adults.

McLaughlin et al. (2010) also suggested that adverse child environments are associated with the onset of mood and anxiety disorders in adulthood, but the mechanisms underlying these life-course associations remain poorly understood. They found that respondents with better overall childhood environments and a greater number of environmental strengths were at lower risk of developing a mood or anxiety disorder in adulthood than respondents with more adverse childhood environments. Higher stress reactivity was observed among respondents from families with lower socio-economic status and with childhood environments characterized by greater conflict and adversity. Elevated stress reactivity, in turn, predicted the onset of adult mood and anxiety disorders. They concluded that emotional reactivity may be one mechanism linking childhood adversity to mood and anxiety disorders in adulthood.

Ritchie et al. (2009) reported that traumatic events in childhood doubled the risk of late-life depression and increased the risk of repeated episodes. Not all events were found to be pathogenic; significant risk was associated with excessive sharing of parental problems, poverty or financial difficulties, mental disorder in parents, excessive physical punishment, and verbal abuse from parents. We also found out that severe financial difficulties and poverty were important traumatic events in childhood and risk factors for depression in the elderly. In addition, these problems were common reasons for conflict situations in the family.

Rothrauff et al. (2009) in their study investigated whether remembered parenting styles in childhood predict multiple dimensions of functioning in adulthood. Adults who remembered authoritative versus authoritarian parents reported a greater psychological well-being and fewer depressive symptoms. There is some support for the view that remembered parenting styles continue to be related to functioning across the lifespan.

The distribution of the subjects in the experimental and the control group with regard to family relations had confirmed a statistically significant difference ($p < 0.01$). Our research has proven the association of family conflicts of the examinees with late manifestation of depression in older adults; actually conflict in family relations was more common for the patients in the experimental group against examinees in the control group. At the same time, father's addiction to alcohol in the experimental group was present in childhood. This traumatic event was reported by 10% of the patients with depression. The tested difference between the examinees of both groups was statistically significant ($p > 0.05$).

Todd (1997) investigated children of alcoholic parents and he suggested that a number of studies assessed the psychopathology of children of alcoholic parents. These nuclear-family studies assessed categorical diagnoses or symptoms of psychiatric

disorders in children. All of the studies reported elevated rates of "internalizing disorders" (i.e., symptoms or diagnoses of depression or anxiety disorders).

The older adults in our research remembered an authoritative parenting style and accepted it as an adequate model of behaviour in the family, the father being the authoritative figure. That style was normal for them in that period, but it is still now. With regard to parenting style we detected a statistically significant difference between the experimental and the control groups. The common negative characteristics of the parents were rigidity and strictness, which are the characteristics of an authoritarian type of the parent.

Dulin et al. (2010) in their study examined the influence of lifetime accumulated trauma on late-life mental health in a sample of older adults, 65-94 years old. Analyses indicated that accumulated trauma predicted both depression and anxiety in this sample. The hypothesis that avoidance of memories and situations surrounding prior trauma mediates relationships between cumulative trauma and depression and anxiety was supported.

However, our study has some limitations. In a sample of 120 elderly, depressive symptoms in late-life were observed to be associated with poor financial conditions, relations in the family, negative personal traits of the parents and father's addiction to alcohol in childhood. However, the sample size was too small. Further study, involving a much larger number of subjects is necessary to confirm the validity of this study's findings.

In our study the analyzed risk factors for late life depression were a small part of possible risk factors, so there is lack of analysis of a wide range of individual childhood events.

The risk factors for late-life depression in our study were from the earliest period of life, so there was a big time distance for getting relevant and detailed information. This will always be a difficult area to research. Most observations have to be done retrospectively.

In our study there is also a lack of instruments, a common problem in this area of research. The paper's methods needed more sophistication and sensitivity. The improving and constructing of better instruments may be useful for conducting the next studies. Also, there is a lack of observation from the aspect of gender differences in vulnerability to adverse life events in childhood.

There are a few studies on this topic in the literature in general and they do not examine this problem in detail, but in broad view. This topic remains a complex and relevant area of study. There are vast opportunities for research but the results must be filtered with sensitivity and a sense of perspective.

This study contributes to the scarce literature of more possible risk factors in depression in older adults. It is conceivable that across the life span, as well as

across cultural settings, individual risk factors will add up with varying emphasis to the prevalence of depression in the elderly.

The knowledge of risk factors might help identify subjects at increased risk of depression for early intervention approaches.

CONCLUSION

The results obtained in our study shown that severe financial difficulties are important events in childhood. Subjects with poor financial conditions during childhood had a significantly greater risk of development of late-life depression. Our research has found the association of relations in the family with late-life depression; actually conflictual family relations were more common in the experimental group than in the control group. Furthermore, father's addiction to alcohol in childhood was associated with depression in the elderly. The difference in the childhood emotional neglect and unequal treatment between siblings in both groups was insufficient to be confirmed statistically, but the examinees with this trauma had a threefold increased risk of having depression in later life. Subjects who estimated their mothers having negative personal character traits had a significantly greater risk for development of late-life depression. Negative personal character traits of the father compared with positive ones significantly increased the risk for depression onset.

Taking into consideration the risk factors, general practitioners can improve the recognition of depression. Consequently, optimal treatment and special attention and focus on risk factors must be major goals in developing effective interventions for the prevention of depression and to promote mental health for this vulnerable population.

Acknowledgements: None.

Conflict of interest: None to declare.

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