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Adverse life events among community-dwelling persons aged 65–70 years: gender differences in occurrence and perceived psychological consequences

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Abstract

Objectives To describe the occurrence of selected adverse life events in young-old men and women, as well as their perceived psychological consequences.

Methods In 2005, 1,422 participants in the Lausanne Cohort 65+ study, born in 1934–1938, self-reported whether they experienced any of 26 life events during the preceding year. Most participants ($N = 1,309$, 92%) completed the geriatric adverse life events scale during a face-to-face interview, by rating the level of stress associated with each event, as well as its impact on their psychological well-being.

Results Overall, 72% of the participants experienced at least one of the 26 events in the preceding year (range 1–9). Disease affecting the respondent ($N = 525$) or a close relative ($N = 276$) was most frequent, as well as the death of a friend or non-close relative ($N = 274$). Women indicated a higher frequency of events (mean 2.1 vs. 1.7 events, $P < 0.001$), as well as a higher level of stress and a stronger negative impact on well-being than men. In multivariate analyses adjusting for self-rated health, depressive symptoms and comorbidity, female gender remained significantly associated with the level of stress and negative impact on psychological well-being.

Conclusion This exploratory study shows that several types of adverse life events frequently occur at age 65–70, with gender differences both in the frequency of reporting and consequences of these events. However, information on this topic is limited and studies based on different populations and designs are needed to better understand the impact of such events.

Introduction

While the occurrence of positive major life events tends to decline with age, some types of adverse events such as the incidence of disease and the loss of a significant relative or friend take place more frequently [1]. Despite the potential impact of these experiences on mental and physical health [2, 3], few instruments are available for evaluating adverse life events in elderly subjects. We found only one scale that had been specifically designed for elderly persons [3], based on the observation that previously existing instruments either included events not relevant to an older population, lacked relevant items, or were too long. Interestingly, this instrument, the geriatric adverse events life scale (GALES), has been the subject of a unique publication [4] which described the occurrence of selected events during the previous 12 months among persons aged 60 years and over, and compared their impact on mood in depressed versus non-depressed subjects. The findings, consistent with a higher level of stress and a stronger negative psychological impact among depressed persons, were considered as evidence of discriminant validity.

Nevertheless, research on this topic remains limited. As an example, a search on Medline, 1980–2008, retrieved

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499 publications about life change events, only 10 of which concerned the occurrence and consequences of such events among older persons. The same search conducted on PsycInfo, 1985–2008, found 85 publications, only one of which was relevant. Furthermore, some of these selected publications focused on specific populations (small sample of persons with a specific disease) or settings (hospital, institution), providing little information on the epidemiology of negative events in the general population of older persons. Indeed, much of the literature concentrated on the association with depressive problems [5–8]. The role of characteristics that might influence an individual's reaction to adverse life events, such as gender or socio-economic status, has not been widely examined in older persons, although studies conducted among younger age groups have shown that female gender, a lower socio-economic and educational status were associated with a higher psychological effect of such events [9, 10].

Therefore, the principal objective of this cross-sectional analysis was to describe the occurrence of recent adverse life events at the age of 65–70 years, as well as the stress and psychological impact related to these events. We were also interested in comparing men and women regarding the frequency and perceived consequences of events, and in investigating whether differences in stress and impact remain after adjustment for potential social, educational and medical confounders.

Methods

In Spring 2004, 1,422 residents of Lausanne born between 1934 and 1938 enrolled in a study on age-related frailty [11] and answered a postal questionnaire that included part of the GALES [4]: they reported whether they experienced any of 26 life events during the preceding year and how many times the event occurred. Most of the participants ($N = 1,309$, 92%) then participated in a face-to-face interview during which the GALES was completed. First, their answers were checked by the research assistant to confirm whether each reported life event indeed occurred within the specified time-frame. Participants then had to rate the level of stress associated with each type of event on a three-point scale (not at all, somewhat, or very stressful), as well as its impact on their psychological well-being on a five-point scale (felt much better, better, the same, worse, or much worse). These ratings took into account the number of times each type of event occurred: for example, a participant who reported the loss of two friends had to rate the stress and impact associated with both bereavements taken together.

Statistical analyses

First, the distribution of life events reported by men and women was examined, as well as the mean number of events reported in each gender for the preceding 12 months. Next, the distribution of levels of stress and impact on psychological well-being associated with each type of event was compared in men and women. The sum of scores across all types of events was computed for both perceived stress and impact on well-being. The mean levels of cumulated stress and impact were compared in men and women. Since the aim of this work was exploratory, we did not adjust for multiple comparisons, and P values are to be taken as indicative.

Finally, the association between gender and life events-related stress and impact was examined in multivariate analyses, adjusting for living alone, self-rated health, depressive symptoms, comorbidity and educational level. Two linear regression models were computed, the first for the association between gender and stress, the second for the association between gender and impact on well-being.

Results

Participants were homogeneously distributed over the 5 years of birth, and 59% of participants were women (Table 1). About half of the participants were married, while one in three was either divorced or widowed, and one in three lived alone. Men were more likely to be married and less likely to live alone. A large majority of men and women rated their health as good or very good, although women more frequently reported two or more chronic diseases. The reporting of depressive symptoms, diagnosed or treated depression was also more frequent among women.

About a quarter of the participants (28%) did not report any of the 26 types of adverse events during the preceding year, 60% experienced 1–3 types of events, and about one in ten participants (12%) experienced as many as 4–9 types of events during the last 12 months. The mean number of types of events was 1.6, while the median was 1. Participants had to indicate how many times they experienced each type of event that occurred during the previous year. Thus, the mean total number of events experienced during the last year was 2.0 (range 0–23), with a median also equal to 1. Most frequently reported events were physical illnesses: onset of a new illness ($N = 259$), existing disease ($N = 266$), and illness of close family members ($N = 276$). The death of a friend or non-first degree relative was also a frequently reported event ($N = 274$). Several participants became caretakers for relatives or friends ($N = 169$). Major financial difficulties were encountered by 110 participants,

Table 1 Description of the study population, by gender (N = 1,422)

Variable	Total population (N = 1,422, %)	Men (N = 582, %)	Women (N = 840, %)	P value*
Civil status				
Married	57.8	74.9	45.9	<0.001
Widowed	13.0	4.1	19.1	
Single	11.4	7.7	14.0	
Divorced	17.8	13.2	20.9	
Living alone	35.0	18.8	46.3	<0.001
Education				
Compulsory schooling only	25.9	18.1	31.3	0.000
Apprenticeship	39.7	42.8	37.5	
Post-compulsory schooling	22.8	20.5	24.3	
Tertiary education	11.6	18.5	6.9	
Self-rated health				
Very good/good	63.7	65.8	62.2	0.171
Fair/poor/very poor	36.3	34.2	37.8	
Chronic diseases: two or more	64.7	60.1	67.9	0.003
Depressive symptoms	25.3	19.7	29.3	<0.001

* P value from χ^2 test

while 146 reported major family conflicts other than with spouse. Other major traumatic events such as deaths of first degree relatives (spouse, parents, child) and divorce were less frequently reported.

Table 2 describes the frequency of the 26 adverse events in men compared to women. Women consistently reported a higher frequency of events, with an average of 2.1 events during the last year, as compared to a mean of 1.7 events in men. A marked gender difference in the occurrence of events was found only for a few events, namely physical illness of a close family member, accident or injury, separation from a close friend or relative other than spouse/partner, and death of pet, which were more frequently reported by women.

The distribution of levels of stress and impact on psychological well-being is displayed for each type of event in Table 3, separately for men and women. Women tended to report a higher level of stress for almost every event, except retirement, death of spouse, and voluntary change of place of residence. The mean level of cumulated stress was higher in women than in men (3.59 vs. 2.62, P < 0.001). In particular, women indicated a higher level of stress than men for illnesses affecting themselves, close relatives or friends, and for non-marital conflicts.

Regarding the impact on psychological well-being, men more often reported that the event had little impact on their well-being, while women more often reported a strong negative impact. As a consequence, the mean level of cumulated negative impact was higher in women than in men (6.74 vs. 5.24, P < 0.001). A few events tended to be rated more negatively by men: marital difficulties, death of spouse, death of parents, being forced to leave home and

having an individual moving into/out of the household were associated with a higher negative impact on well-being, although not to a statistically significant extent, in men as compared to women. By contrast, a few events were not infrequently rated as having had a positive effect on well-being. In particular, getting divorced or breaking up a long-term relationship, as well as moving, sometimes resulted in an improved psychological well-being. Becoming a care-taker also occasionally had a positive effect. Finally, in women, the death of a spouse or the death of a parent was associated with improved well-being in some cases, although this was not the case in men.

In multivariate analyses (Table 4), female gender remained positively and significantly associated with the level of stress and the level of negative impact on psychological well-being. Perceiving own health as fair or poor, reporting depressive symptoms or depression or having two or more chronic diseases were all positively associated with both level of stress and negative impact. The relationship between the level of educational status and the level of stress, respectively of impact, showed a positive trend, indicating an increasing stress and negative impact with higher educational level. The association was significant in the higher education groups only.

Conclusions

About 3 out of 4 young-old persons in our study experienced at least one of 26 adverse events during the past year, with a higher frequency among women, as previously reported [10, 12]. Since the GALES instrument involves a

Table 2 Occurrence of adverse life events during the previous 12 months, by gender

Adverse life events	Men (N = 582)		Women (N = 840)		P value*
	n	%	n	%	
Financial/work difficulties					
Financial difficulties	43	7.4	67	8.0	0.778
Retirement	19	3.3	15	1.8	0.178
Loss of employment	3	0.5	3	0.4	0.786
Physical illness/accident					
New major physical illness	96	16.5	163	19.4	0.301
Other major physical illness	97	16.7	169	20.1	0.204
Physical illness of close family member	**92**	**15.8**	**184**	**21.9**	**0.012**
Accident/injury	**40**	**6.9**	**97**	**11.6**	**0.010**
Interpersonal conflicts					
Marital separation/divorce	8	1.4	6	0.7	0.408
Other marital difficulties	29	5.0	37	4.4	0.771
Major family problems/conflicts other than with spouse	52	8.9	94	11.2	0.318
Major problems/conflicts with friends/ neighbours	18	3.1	29	3.5	0.803
Break-up of long-term relationship other than marriage	6	1.0	13	1.6	0.606
Separation from other close friend/relative	**4**	**0.7**	**31**	**3.7**	**0.001**
Interpersonal loss					
Death of spouse	3	0.5	9	1.1	0.455
Death of child	3	0.5	3	0.4	0.786
Death of parent	16	2.8	28	3.3	0.705
Death of brother/sister	25	4.3	28	3.3	0.568
Death of other relative/close friend	106	18.2	168	20.0	0.580
Death of pet	**11**	**1.9**	**40**	**4.8**	**0.013**
Disruption in living situation					
Forced to leave/lose home	5	0.9	4	0.5	0.586
Voluntarily changed place of residence	12	2.1	14	1.7	0.753
Individual moved out of household	4	0.7	9	1.1	0.651
Individual moved into household	8	1.4	7	0.8	0.541
Other life events					
Difficulty getting adequate professional services	11	1.9	17	2.0	0.852
Victim of crime	27	4.6	35	4.2	0.799
Became caretaker for relative/friend	57	9.8	112	13.3	0.101
Cumulated life events					
Mean number of life events ±SD, range, median	**1.72 ± 0.08, (0–13), 1**		**2.13 ± 0.09, (0–23), 1**		**<0.001****

* P value from χ^2 test or Fisher's exact test

** P value from t test

selection of relevant important negative events such as diseases and deaths, the occurrence of over- or under-reporting due to forgetfulness is unlikely. Indeed, a 1 year time-frame has been considered as appropriate for obtaining a reasonable estimate of variations in exposure to recent life events, but short enough to avoid a substantial decline in the ability to recall the events [13]. Moreover, the self-completed instrument was then checked by the research assistant during a face-to-face interview. There are two plausible explanations for the gender difference in the frequency of self-reported life events. First, women are more likely to experience the death of a spouse or friend because of their longer life expectancy as compared to men, and because women in this generation did tend to marry men who are older than themselves. Second, the possibility that women are more likely to report their diseases or other adverse events than men cannot be ruled out [14]. However, although women are known to be more likely to suffer from

Table 3 Degree of stress and impact on mood related to negative life events, by gender ($N = 1,309$)

Adverse life events	Degree of stress	Men		Women		P value	Impact on mood	Men		Women		P value
		n	%	n	%			n	%	n	%	
Financial/work difficulties												
Financial difficulties	Low	10	23.3	6	9.0	ns	Better/much better	2	4.7	3	4.5	ns
	Medium	14	32.6	27	40.3		No change	9	20.9	7	10.4	
	High	19	44.2	34	50.8		Worse/much worse	32	74.4	57	85.1	
Retirement	Low	9	50.0	11	73.3	ns	Better/much better	3	16.7	3	20.0	ns
	Medium	6	33.3	1	6.7		No change	8	44.4	5	33.3	
	High	3	16.7	3	20.0		Worse/much worse	7	38.9	7	46.7	
Loss of employment	Low	1	33.3	1	33.3	ns	Better/much better	0	0.0	0	0.0	ns
	Medium	1	33.3	0	0.0		No change	1	33.3	0	0.0	
	High	1	33.3	2	66.7		Worse/much worse	2	66.7	3	100.0	
Physical illness/accident												
New major physical illness	Low	38	40.0	57	35.0	ns	Better/much better	10	10.5	17	10.4	ns
	Medium	34	35.8	52	31.9		No change	27	28.4	27	16.6	
	High	23	24.2	54	33.1		Worse/much worse	58	61.1	119	73.0	
Other major physical illness	Low	38	40.0	43	25.9	***	Better/much better	11	11.6	11	6.6	ns
	Medium	41	43.2	65	39.2		No change	21	22.1	29	17.5	
	High	16	16.8	58	34.9		Worse/much worse	63	66.3	126	75.9	
Physical illness of close family member	Low	30	32.6	32	17.5	***	Better/much better	8	8.7	11	6.0	ns
	Medium	34	37.0	66	36.0		No change	11	12.0	30	16.4	
	High	28	30.4	85	46.5		Worse/much worse	73	79.3	142	77.6	
Accident/injury	Low	19	47.5	34	35.4	ns	Better/much better	1	2.5	2	2.1	ns
	Medium	13	32.5	27	28.1		No change	18	45.0	24	25.0	
	High	8	20.0	35	36.5		Worse/much worse	21	52.5	70	72.9	
Interpersonal conflicts												
Marital separation/divorce	Low	2	25.0	1	16.7	ns	Better/much better	2	25.0	3	50.0	ns
	Medium	1	12.5	1	16.7		No change	1	12.5	1	16.7	
	High	5	62.5	4	66.6		Worse/much worse	5	62.5	2	33.3	
Other marital difficulties	Low	4	13.8	4	10.8	ns	Better/much better	0	0.0	2	5.4	ns
	Medium	13	44.8	8	21.6		No change	5	17.2	2	5.4	
	High	12	41.4	25	67.6		Worse/much worse	24	82.8	33	89.2	
Major family problems/ conflicts other than with spouse	Low	12	23.1	4	4.3	***	Better/much better	4	7.7	3	3.2	*
	Medium	25	48.1	31	33.0		No change	5	9.6	2	2.1	
	High	15	28.8	59	62.7		Worse/much worse	43	82.7	89	94.7	
Major problems/conflicts with friends/neighbours	Low	8	44.4	3	10.4	*	Better/much better	1	5.6	1	3.5	ns
	Medium	4	22.2	13	44.8		No change	6	33.3	5	17.2	
	High	6	33.3	13	44.8		Worse/much worse	11	61.1	23	79.3	
Break-up of long-term relationship other than marriage	Low	3	50.0	5	38.5	ns	Better/much better	1	16.7	4	30.7	ns
	Medium	2	33.3	2	15.4		No change	2	33.3	1	7.7	
	High	1	16.7	6	46.1		Worse/much worse	3	50.0	8	61.5	
Separation from other close friend/relative	Low	3	75.5	11	35.5	ns	Better/much better	0	0.0	3	9.7	ns
	Medium	1	25.0	9	29.0		No change	2	50.0	4	12.9	
	High	0	0.0	11	35.5		Worse/much worse	2	50.0	24	77.4	
Interpersonal loss												
Death of spouse	Low	1	33.3	3	33.3	ns	Better/much better	0	0.0	2	22.2	ns
	Medium	0	0.0	3	33.3		No change	0	0.0	2	22.2	
	High	2	66.7	3	33.3		Worse/much worse	3	100.0	5	55.6	

Table 3 continued

Adverse life events	Degree of stress	Men		Women		P value	Impact on mood	Men		Women		P value
		n	%	n	%			n	%	n	%	
Death of child	Low	1	33.3	0	0.0	ns	Better/much better	0	0.0	0	0.0	ns
	Medium	0	0.0	0	0.0		No change	0	0.0	0	0.0	
	High	2	66.7	3	100.0		Worse/much worse	3	100.0	3	100.0	
Death of parent	Low	6	37.5	13	46.4	ns	Better/much better	0	0.0	4	14.3	ns
	Medium	6	37.5	5	17.9		No change	4	25.0	5	17.9	
	High	4	25.0	10	35.7		Worse/much worse	12	75.0	19	67.9	
Death of brother/sister	Low	10	40.0	12	42.9	ns	Better/much better	2	8.0	1	3.6	ns
	Medium	8	32.0	5	17.9		No change	4	16.0	3	10.7	
	High	7	28.0	11	39.2		Worse/much worse	19	76.0	24	85.7	
Death of other relative/close friend	Low	52	49.5	73	43.5	*	Better/much better	6	5.8	10	6.0	**
	Medium	40	38.1	51	30.4		No change	36	34.6	31	18.4	
	High	13	12.4	44	26.2		Worse/much worse	62	59.6	127	75.6	
Death of pet	Low	4	36.4	9	22.5	ns	Better/much better	2	18.2	3	7.5	ns
	Medium	6	54.5	15	37.5		No change	1	9.0	2	5.0	
	High	1	9.1	16	40.0		Worse/much worse	8	72.7	35	87.5	
Disruption in living situation												
Forced to leave/lose home	Low	2	40.0	1	25.0	ns	Better/much better	0	0.0	3	75.0	ns
	Medium	1	20.0	0	0.0		No change	1	20.0	0	0.0	
	High	2	40.0	3	75.0		Worse/much worse	4	80.0	1	25.0	
Voluntarily changed place of residence	Low	3	25.0	4	28.6	ns	Better/much better	8	66.7	8	57.1	ns
	Medium	3	25.0	5	35.7		No change	1	8.3	2	14.3	
	High	6	50.0	5	35.7		Worse/much worse	3	25.0	4	28.6	
Individual moved out of household	Low	3	75.0	5	55.6	ns	Better/much better	0	0.0	2	22.2	ns
	Medium	0	0.0	1	11.1		No change	2	50.0	2	22.2	
	High	1	25.0	3	33.3		Worse/much worse	2	50.0	5	55.6	
Individual moved into household	Low	6	75.0	2	28.6	ns	Better/much better	2	25.0	2	28.6	ns
	Medium	2	25.0	5	71.4		No change	5	62.5	4	57.1	
	High	0	0.0	0	0.0		Worse/much worse	1	12.5	1	14.3	
Other life events												
Difficulty getting adequate professional services	Low	2	18.2	1	5.9	ns	Better/much better	0	0.0	1	5.9	ns
	Medium	4	36.4	4	23.5		No change	1	9.1	2	11.8	
	High	5	45.4	12	70.6		Worse/much worse	10	90.9	14	82.3	
Victim of crime	Low	8	29.6	8	22.9	ns	Better/much better	0	0.0	0	0.0	ns
	Medium	10	37.1	8	22.9		No change	14	51.9	12	34.3	
	High	9	33.3	19	54.2		Worse/much worse	13	48.1	23	65.7	
Became caretaker for relative/ friend	Low	30	54.5	51	46.8	ns	Better/much better	12	21.8	25	22.9	ns
	Medium	17	30.9	38	34.9		No change	21	38.2	43	39.4	
	High	8	14.6	20	18.3		Worse/much worse	22	40.0	41	37.6	
Cumulated life events												
Mean level of cumulated stress or impact	Mean level of stress (SD), range	2.62 (2.98)		3.59 (3.98)		***	Mean level of impact (SD), range	5.24 (5.55)		6.74 (7.0)		***
		0–17		0–36				0–36		0–43		

ns not significant (P > 0.05)

* P < 0.05, ** P < 0.01, *** P < 0.001

chronic diseases [2, 15], we observed no difference in the frequency of incident physical illnesses in men and women, but only in the frequency of any accident or injury in the previous year. Finally, women more frequently reported becoming caretakers for a relative or friend, which might be linked to their longevity or to their social role.

Table 4 Results of multivariate linear regression examining the association between gender and overall life events-related stress and impact

Characteristic	Life events-related stress			Life events-related impact on well-being		
	Coefficient	[95% confidence interval]	P value	Coefficient	[95% confidence interval]	P value
Female gender	0.86	[0.46; 1.25]	<0.001	1.17	[0.47; 1.88]	0.001
Living alone	−0.39	[−0.79; 0.01]	0.056	−0.39	[−1.10; 0.315]	0.276
Good-very good self-rated health	−1.03	[−1.45; −0.61]	<0.001	−1.93	[−2.67; −1.18]	<0.001
Depressive symptoms	2.28	[1.84; 2.72]	<0.001	3.85	[3.06; 4.63]	<0.001
Two or more chronic diseases	0.64	[0.24; 1.04]	0.002	1.11	[0.40–1.82]	0.002
Educational level						
Compulsory schooling only	–	–	–	–	–	–
Apprenticeship	0.06	[−0.41; 0.53]	0.804	0.23	[−0.61; 1.06]	0.597
Post-compulsory schooling	0.60	[0.07; 1.12]	0.026	1.34	[0.40; 2.28]	0.005
Tertiary education	0.71	[0.04; 1.38]	0.035	1.39	[0.21; 2.58]	0.021

As women more often reported factors associated with a greater burden of negative events, such as depressive symptoms, a lower education level, or chronic diseases, we examined the relationship between female gender and life events-related stress and impact in multivariate models. For both stress and impact, a significant independent association was found with female gender. This finding is consistent with previous studies. As an illustration, research on the scaling of life change events has illustrated profound differences between men and women in the scaling of similar events [16]. The comparison of men's and women's levels of stress and psychological impact for each type of event has to be taken as indicative for two reasons. First, the low frequency of reporting of several events, such as deaths, might be responsible for the lack of statistical power in these comparisons. Second, some statistically significant differences might be attributable to the numerous comparisons. However, the observed tendencies correspond to previous findings. In particular, men have been observed to be less able to cope with the death of a spouse [17].

The GALES might be criticized, in particular regarding the inclusion of existing diseases in the list of negative events, although they might not be considered as events in the sense of discrete occurrences. This inclusion might however well be justified considering that a chronic disease, such as cardiovascular disease, might cause stress and other psychological consequences on the long-term, in particular because of periods of exacerbation. Our results confirm the impact of these diseases on well-being in a older population. Then, the checklist format of the GALES allows to gather a limited amount of information as compared to qualitative research. A checklist approach nevertheless allows to collect standardised information on significant events in the context of quantitative studies not dedicated to the topic of life events, to examine their relationship with health, and to take them into account when studying health outcomes.

In conclusion, this descriptive work highlights the frequency and perceived consequences of adverse life events in the general population of older persons, even at the beginning of old age. The Lausanne Cohort 65+ study will allow us to further study the impact of such events longitudinally, and, in particular, their association with age-related frailty.

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