# Nine-year follow-up of specific phobia in a population sample of older

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Short title: Nine-year follow-up of specific phobia

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### **Declaration of interest**

The authors report no conflicts of interest.

# Abstract

**Background:** Little is known about the long term course of specific phobia in the general population. We examined the prevalence and course of specific phobia (SP) and sub-threshold fears in an older population followed over nine years.

**Method:** A psychiatric examination was performed in a population-based sample of 558 70year olds, among whom 303 dementia-free survivors were followed up at both ages 75 and 79 years. Fears were rated with respect to level of anxiety and social or other consequences. *DSM-IV* SP was diagnosed when fears were associated with prominent anxiety and had social or other consequences. All other fears were labelled sub-threshold fears.

**Results:** The prevalence of SP declined from 9.9% at age 70 to 4.0% at age 79 years. The reason was that the prevalence of fears associated with prominent anxiety (mandatory in the diagnosis) decreased, while the prevalence of fears that gave social or other consequences remained stable. A total of 14.5% of the population had SP at least once during the study. Among these, 11.4% had SP and 65.9% had specific fear at all three examinations.

**Conclusion:** The prevalence of fears associated with prominent anxiety decreased with age, resulting in an overall decline in the prevalence of SP. SP seems to be a fluctuating disorder, and in most cases an exacerbation of chronic sub-threshold fears.

### Introduction

Irrational fears of specific stimuli such as snakes, heights, elevators or blood are present in between 11% to 74%, mostly around 50%, of the population and are more common in women than in men.<sup>[1-4]</sup> Only a minority of individuals with these fears fulfill diagnostic criteria for specific phobia (SP). SP seems to be associated with less disability and lower help-seeking behaviour than most other mental disorders.<sup>[5]</sup> The reason may be that even severe fears do not cause much impairment if the stimulus can be easily avoided. However, because of the high prevalence of SP, the number of severely disabled individuals in the population is high.<sup>[5]</sup> SP is thus common in old age, with prevalence estimates ranging from 2.0% to 10.0%.<sup>[6-9]</sup> Previous studies of older populations have found that both point <sup>[6-8]</sup> and life-time <sup>[7; 10]</sup> prevalence of SP decreases with age. The variation in reported prevalence rates may thus partly be explained by variations in the age structure between populations. Retrospective information may also underestimate the occurrence of mental disorders over lengthy periods due to recall failure.<sup>[11]</sup> This may be especially important in older individuals. Longitudinal studies are thus needed to provide better estimates of the prevalence of SP in older people. Recent prospective population studies of SP in adults both below <sup>[3; 12]</sup> and above <sup>[13; 14]</sup> age 65 years report that only 10-40% of individuals with SP fulfil diagnostic criteria at follow-up. This is considerably less than what is found in clinical studies.<sup>[15; 16]</sup> However these population studies had follow-ups of three years or less, and had little information on residual sub-threshold fears in remitted individuals.

The aim of this study was to examine the epidemiology of specific phobia (i.e. its prevalence, course and prognosis) in an older population followed over nine years (with examinations at ages 70, 75 and 79 years). We also assessed sub-threshold fears to give a more comprehensive description of the course of SP.

# Materials and methods

#### Sample

The sample was derived from the Prospective Population Study of Women (PPSW) and from the H70 Study in Gothenburg, Sweden.<sup>[17; 18]</sup> Both samples were obtained from the Swedish Population Register, based on birth date, and included both persons living in private households and in institutions.

In 2000, PPSW and H70 merged to become one study, and a subsample born on pre-specified dates in 1930 and living in Sweden on September 1 were selected to a new cohort of 70-year olds (N=896). Five persons could not be found, 13 died before they could be examined, 18 could not speak Swedish and 15 had emigrated outside Sweden, leaving an effective sample of 845 individuals. Among these, 579 (350 women and 229 men) accepted participation in a psychiatric examination (response rate 68.5 %). Due to the structure of the study, the sample had a higher proportion of women than the general population (60% vs. 52%). The responserate was higher in women than in men (72.2 % vs. 63.6%,  $\chi^2$ =7.01, df=1, p=0.008). Nonparticipants were more likely to die before age 75 both among men (18.3% vs. 6.1%,  $\chi^2$ =13.15, df=1, p<0.001) and among women (6.7% vs. 2.0%,  $\chi^2$ =6.65, df=1, p=0.01). Among men, non-participants tended to more often have a psychiatric diagnosis in the Swedish Hospital Discharge Register (23.7% vs. 16.2%,  $\chi^2$ =3.07, df=1, p=0.080) and to have received in-patient care in the year preceding the interview (30.5% vs. 22.7%,  $\chi^2$ =2.68, df=1, p=0.10). Female non-participants and participants did not differ regarding these factors (25.1% vs. 25.0%,  $\chi^2$ =0.001, df=1, p=0.97 and 29.0 vs. 28.2%,  $\chi^2$ =0.07, df=1, p=0.78). Individuals diagnosed with dementia at age 70 (N=16), and those with missing data on fear items (N=5) were excluded from the analyses, leaving 558 individuals.

Follow-up examinations were performed in 2005 (at age 75 years) and 2009 (at age 79 years). The present study includes only individuals who took part in all three examinations. Of the 558 individuals examined at age 70 years, 90 died before the follow-up examination at age 79 years, leaving 468 individuals. The mortality rate was higher among men than among women (22.3% vs. 12.0%,  $\chi^2$ =10.61, df=1, p=0.001). Of the 468 surviving individuals, 327 (69.9%) took part in all examinations. There was a tendency for a lower participation rate among men compared to women (65.5% vs. 72.4%,  $\chi^2$ =2.50, df=1, p=0.11). Participants had a lower 3-year mortality rate (between age 79 and 82 years) among men (10.5% vs. 23.3%,  $\chi^2$ =5.07, df=1, p=0.024), but not among women (3.7% vs. 6.6%, Fisher's exact test=, p=0.42). Individuals with incident dementia (N=21) or missing data on fear items (N=3) were excluded from analysis, leaving 303 persons (197 women and 106 men) for the present study.

Participants were examined at out-patient clinics in Gothenburg. If they declined to visit the out-patient clinic or had moved elsewhere in Sweden, they were offered home visits. After complete description of the study, written informed consent was obtained from all participants and/or their relatives. The study was approved by the Regional Ethical Review Board in Gothenburg.

#### Methods

A semi-structured psychiatric examination was performed by trained psychiatric research nurses using the Comprehensive Psychopathological Rating Scale (CPRS),<sup>[19]</sup> which has good applicability and inter-rater reliability in older people,<sup>[20]</sup> and the Mini-International Neuropsychiatric Interview (MINI).<sup>[21]</sup> Both instruments rated psychiatric symptoms and signs during the past month. The examination also included tests of memory, language,

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apraxia, construction, finger agnosia, agraphia, alexia, acalculia, and comprehension of proverbs.

Participants were asked if there were any situations or objects for which they perceived irrational dread or anxiety, and were given a list of examples. Responses were rated by the interviewer from 0 ('no fear') to 6 ('incapacitating fear'). Ratings 2-3 (vague discomfort mastered without help or by simple precautions) were labelled 'mild-moderate fears' and ratings 4 (certain situations consistently provoke marked discomfort and are avoided) to 6 (incapacitating fear which severely restricts activities) were labelled 'fears with prominent anxiety.' Inter-rater reliability was assessed among individuals who had dual ratings by psychiatric research nurses or psychiatrists. Inter-rater agreement for the ratings no, mild-moderate or fears with prominent anxiety was good, with Cohen's kappa 0.85 (142 comparisons).

Fears were further categorized into fear of animals (e.g., snakes, spiders, and rats), natural environment (e.g., heights, thunderstorms, and water), blood-injection-injury, specific situations (e.g., elevators, flying, enclosed spaces, and bridges) or 'other' (e.g., vomiting, suffocating and illness). The inter-rater reliabilities for these categorizations were  $\kappa$ =0.89 for animals (59 comparisons),  $\kappa$ =0.93 for natural environment (60 comparisons),  $\kappa$ =1.00 (59 comparisons) for blood-injection-injury,  $\kappa$ =0.92 (62 comparisons) for specific situations and  $\kappa$ =0.73 (60 comparisons) for other types of fear.

Social or other consequences of fears were rated as none, some (such as being unable to use an elevator or travel by airplane) or severe (incapacitating). The inter-rater reliability was  $\kappa$ =0.75 (35 comparisons).

A diagnosis of specific phobia (SP) according to the  $DSM-IV-TR^{[22]}$  was made when the fear was associated with prominent anxiety and avoidance behaviour (rating 4-6) and had at least some social or other consequences. All fears with a rating of 2-3 and fears with a rating of 4-6

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but without consequences were labelled sub-threshold fears. The category 'any specific fear' includes both those with SP and those with sub-threshold fears.

Social phobia, panic attacks, obsessive compulsive disorder (OCD), generalized anxiety disorder (GAD) and depression (major depressive disorder or minor depression according to research criteria) were diagnosed according to the *DSM-IV-TR*.<sup>[22]</sup> Dementia was diagnosed according to the *DSM-IV-TR*.<sup>[22]</sup> Dementia was diagnosed according to the *DSM-III-R*.<sup>[23]</sup> based on information from the neuropsychiatric examination, and key informant interview. This diagnosis was only used for exclusion. More detailed descriptions of these diagnostic procedures have been given previously.<sup>[24-27]</sup>

#### Statistical analysis

All analyses were made in SPSS version 22.0 (IBM corp., Armonk, New York, USA). Differences in proportions were tested with Pearson Chi-square-test or Fisher's exact test when appropriate. Ageing was defined as time in years from age 70. The effect of ageing on the prevalence of SP and specific fears was estimated from generalized estimating equations (GEE) models with a logistic function, computed by the GENLIN command in SPSS using a robust estimator of the parameter estimate covariance matrix. Persistence of any specific fears or SP was defined as having these conditions at age 70 and at least once during follow-up. To find possible predictors of persistent specific fears at the two follow-up examinations, we first calculated odds ratios from bivariate GEE models. Variables with a significant effect were included in a multivariate model. Because of low numbers, we could not study persistence of SP with GEE. Thus, differences in proportion between remitted and persistent cases were compared with the Fisher's exact test. Results were considered statistically significant at p<0.05 (two-tailed).

### Results

Individuals included in the present study (N=303) did not differ from the rest of the baseline sample who survived to age 79 years (N=165) in the prevalence of SP (9.9% vs 10.9%,  $\chi^2$ =0.12, df=1, p=0.73) or any specific fear (59.1% vs 61.2%,  $\chi^2$ =0.20, df=1, p=0.65) at age 70. Among men, participants had a lower prevalence of SP at age 70 (1.9%, N=2 vs. 8.8%, N=6, p=0.06), but not of any specific fear (39.7% vs 34.0%,  $\chi^2$ =0.59, df=1, p=0.44). Female participants and non-participants did not differ in these respects (SP: 14.2% vs. 12.4%,  $\chi^2$ =0.19, df=1, p=0.67, any specific fear: 72.6% vs. 76.3%,  $\chi^2$ =0.46, df=1, p=0.50). SP and sub-threshold fears at age 70 years were not related to mortality or incident dementia during the nine-year follow-up (data not shown).

The prevalence of specific phobia and sub-threshold fears in relation to age and gender is presented in Table 1. The prevalence of SP was 9.9% at age 70, 6.9% at age 75 and 4.0% at age 79 years. In total, 14.5% of the sample had SP at least once at either age 70, 75 or 79 years, 3.0% had SP at two examinations and 1.7% had SP at all three examinations. The prevalence of any specific fear (SP and sub-threshold fear) was 59.1% at age 70 years, 43.9% at age 75 and 39.6% at age 79.

In generalized estimating equation (GEE) models, the odds of having SP (OR per year 0.90, 95% CI 0.85 – 0.96, Wald  $\chi^2$ =11.63, df=1, p<0.001) and any specific fear (OR per year 0.92, 95% CI 0.89 – 0.94, Wald  $\chi^2$ = 39.39, df=1, p<0.001) decreased with age between age 70 and 79 years.

The criteria for SP require the presence of prominent anxiety and social consequences. Their prevalence in relation to age and gender is presented in Table 2. The odds of having a specific fear with prominent anxiety declined with age (OR per year 0.91, 95% CI 0.86 – 0.96, Wald  $\chi^2$ =10.95, df=1, p=0.001), while the odds of having a specific fear with social or other

consequences did not change with age (OR per year 0.99, 95% CI 0.95 – 1.03, Wald  $\chi^2$ =0.24, df=1, p=0.63).

Table 3 presents the course of SP. Among those diagnosed with SP at some time during the study (N=44), 11.4% (N=5) had SP at all examinations, 65.9% (N=29) had any specific fears at all examinations, 34.1% (N=15) had absence of specific fears at least at one examination, and 6.8% (N=3) had SP at one examination but no specific fears at the other examinations. Among those with specific phobia at age 70 (N=30), 93.3% had specific phobia (40.0%) or sub-threshold fears (76.7%) at least once during follow-up. Furthermore, 16.7% had SP and 70.0% had any specific fear both at ages 75 and 79 years.

The cumulative 9-year incidence of SP during follow-up was 7.4% (N=11) in those with subthreshold fear and 2.4% (N=3) in those with no specific fears (OR 3.2, 95% CI 0.9-11.8, Wald  $\chi^2$ =3.10, df=1, p=0.08) at age 70, giving a total cumulative 9-year incidence of 5.1% (7.7% (N=13) in women and 1.0% (N=1) in men; OR 8.6, 95% CI 1.1-66.6, p=0.04).

Among those with SP at age 70, persistence of SP during follow-up was not associated with gender, comorbid mental disorders or type of fear at age 70 (Table 4). Table 5 presents possible predictors of specific fears among those reporting any specific fear at age 70. Independent predictors of persistent fear were female gender and having SP.

### Discussion

We found that the prevalence of specific phobia (SP) and sub-threshold fears decreased between age 70 and 79 years. Thus, factors related to ageing seem to have a positive influence on the prevalence and prognosis of SP. Most individuals diagnosed with SP at age 70 did not fulfil diagnostic criteria later during the study. However, the great majority had at least subthreshold fears at follow-up. It thus seems that specific phobia in old age most often is an exacerbation of chronic sub-threshold fears. Our results suggest a chronic course, which fluctuates around the diagnostic threshold, in older persons with SP.

We could confirm the age-related decline in the prevalence of SP among older people reported from cross-sectional studies <sup>[6; 7].</sup> Two previous population studies of older people found a prevalence of *DSM-IV* SP of 2% and 4.5% <sup>[7; 8].</sup> These studies included persons of all ages above 65 years, which may give a lower overall prevalence due to the declining prevalence of SP with increasing age. Our study suggests that there are substantial differences in the prevalence of SP between the "younger" and "older" part of the population above age 65 years.

There may be several explanations for our findings. First, the age-related decline in the prevalence of SP and sub-threshold fears may be explained by age-related changes in the neurobiology and psychology of fear. Older persons are less prone to fear conditioning than younger persons<sup>[28]</sup> and have a decreased reactivity to negatively valenced stimuli in general.<sup>[28; 29]</sup> This is suggested to be due to neurodegeneration or improved emotional regulation.<sup>[30]</sup> Furthermore, the autonomic response to panic-inducing stimuli may be diminished in older people.<sup>[31]</sup> This response may be diminished also for phobic stimuli, which would prevent a fear from reaching the diagnostic threshold for SP, a hypothesis

consistent with our finding of an age-related decline in the prevalence of fears with prominent anxiety, but a stable prevalence of fears giving social or other consequences.

Second, age-related changes in physical health and social activities may lead to reduced exposure to phobic stimuli. This would eliminate the consequences of the fear, the need for avoidance behaviour and possibly also reduce reporting of fears that would still hypothetically be provoked by the stimulus. Contrary to this explanation, we found no age-related decline in the prevalence of fears giving social or other consequences, which would be expected if the age-related decline in the prevalence of SP was due to reduced exposure.

In line with previous studies,<sup>[2; 3]</sup> we found a higher prevalence of SP and sub-threshold fears in women than in men. A vast majority (86.3%) of the women had specific fears at some point during the study, about twice as many as among the men (44.3%). The gender difference was especially prominent for persistent fears. Women were about seven times more likely than men to have specific fears at all three examinations (34.0% vs 4.7%). Female gender also predicted persistence of specific fears from baseline to follow-up. Thus, women had a higher prevalence and incidence of SP, and their symptoms were more persistent. Similar gender differences in stability of fears were found in a prospective study of adolescents.<sup>[32]</sup> Our study suggests that these gender differences persist over the lifespan. Gender differences in SP and specific fears may be due to genetic or sociocultural factors influencing traits such as negative affectivity.<sup>[33]</sup> Sociocultural factors may also make men less willing to disclose fears.<sup>[34]</sup>

Comparisons between retrospective and longitudinal studies suggest that retrospective studies underestimate the long-term prevalence of mental disorders due to recall failure.<sup>[11]</sup> We found that 14% of the population, and as many as 20% of the women, received a diagnosis of SP

during the nine-year study period. This is comparable to the 18% life-time prevalence reported from a retrospective study of older persons,<sup>[35]</sup> as well as the 18% 14-year prevalence in a longitudinal study of individuals examined four times between age 18 and 32 years<sup>[11]</sup> and the 26.9% 29-year prevalence in a sample examined seven times between age 20 and 50 years.<sup>[36]</sup> However, our nine-year prevalence figure is considerably higher than some recent retrospective estimates of life-time prevalence of SP in older people.<sup>[7; 10]</sup> The problem of recall failure may be of special importance in older populations, and for relatively mild conditions, such as SP.

We found that specific fears were more likely to be persistent in individuals with SP than in those with sub-threshold fears, indicating that individuals with SP are more fear prone than those with sub-threshold fears. Two thirds of those with SP experienced a chronic course of at least sub-threshold fears. On the other hand, only a minority (40%) of those with SP at age 70 fulfilled diagnostic criteria for SP at any follow-up examination. Furthermore, among those diagnosed with SP during the study, only 20% had SP at two and 11% at three examinations. This corresponds to 3% and 1.7% of the whole population and is in sharp contrast to the cumulative 14.5% nine-year prevalence. The low rate of persons fulfilling diagnostic criteria more than once is partly explained by the age-related decline in the prevalence of SP. It may also indicate that the majority of SP cases in our study are short-term exacerbations of chronic sub-threshold fears. Some further support to this hypothesis is the non-significant trend for a higher incidence of specific phobia among those with sub-threshold fears than in those with no fears at age 70 years.

Our findings regarding the prognosis of SP are consistent with previous longitudinal studies of both older <sup>[13; 14]</sup> and younger populations, <sup>[3; 12]</sup> although the follow-up time in these studies was shorter than in our study, with a maximum of three years. This suggests a similar pattern

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of exacerbations of chronic sub-threshold fears in all adult age groups. Population studies differ markedly from clinical prospective studies,<sup>[15; 16]</sup> in which the prognosis of SP is substantially poorer. Clinical samples may include individuals with more severe SP, psychiatric comorbidity, higher perceived need for treatment and less coping abilities. The limited size of our sample makes it difficult to explore differences between chronic and episodic cases of SP, but this topic merits further study.

#### **Strengths and limitations**

Strengths of the study include the population-based sample, the comprehensive examinations by clinically experienced interviewers, the long follow-up time and the high response rate at follow-up. The use of semi-structured instruments may strengthen the diagnosis of SP in population studies, since the vast number of different phobias may be hard to cover in structured interviews. This may partly explain the relatively high prevalence of SP in our study compared to studies using structured interviews.

Some limitations also need to be addressed. First, although the initial response rate was acceptable (68.5%), participants were healthier than non-participants, which may have led to underestimation of psychiatric morbidity. Second, the study sample was relatively small, especially its male part. The number of men with SP at age 70 was low and therefore sensitive to drop-out. Thus, our results may be less generalizable to men with SP. Third, although the inter-rater reliability was good, the age-related decline in the prevalence of SP could have been influenced by how individuals change their report of fear symptoms and their consequences between examinations, for example by attributing them to age-related constraints.<sup>[37]</sup> Fourth, we could not provide a diagnosis of SP according to *DSM-5*,<sup>[38]</sup> in which the excessiveness of fears is based on clinician's judgement instead of self-judgement. One study did not find this to affect the prevalence of SP in clinical samples.<sup>[39]</sup> Finally, we

had no data on whether participants with SP had received treatment, but it is unlikely that a

high rate of treatment accounted for the high rates of remission in the present study.

# Conclusions

Although ageing did not reduce the prevalence of specific fears that had social or other consequences, the prevalence of specific phobia declined with age since fears were more seldom associated with prominent anxiety. A large proportion of this population had specific phobia at some point during the study and most fears in older individuals with specific phobia were persistent. It seems that SP is a fluctuating disorder, in most cases an exacerbation of chronic sub-threshold fears, and that chronicity of SP is rare.

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# Tables

	Spec	cific phobia	χ2	df	р	Any specific fears		χ2	df	р
	Ν	%				Ν	%			
Age 70										
Men	2	1.9				36	34.0			
Women	28	14.2	11.7	1	< 0.001	143	72.6	42.5	1	< 0.001
Total	30	9.9				179	59.1			
Age 75										
Men	0	0.0				19	17.9			
Women	21	10.7	12.1	1	< 0.001	114	57.9	44.6	1	< 0.001
Total	21	6.9				133	43.9			
Age 79										
Men	1	0.9				19	17.9			
Women	11	5.6	3.9	1	0.05	101	51.3	32.0	1	< 0.001
Total	12	4.0				120	39.6			
Having condition at										
Three examinations			18.4*	3	< 0.001			71.5*	3	< 0.001
Men	0	0.0				5	4.7			
Women	5	2.5				67	34.0			
Total	5	1.7				72	23.8			
Two examinations										
Men	0	0.0				17	16.0			
Women	9	4.6				54	27.4			
Total	9	3.0				71	23.4			
One examination										
Men	3	2.8				25	23.6			
Women	27	13.7				49	24.9			
Total	30	9.9				74	24.4			
Any examination										
Men	3	2.8				47	44.3			
Women	41	20.8	18.0	1	< 0.001	170	86.3	59.7	1	< 0.001
Total	44	14.5				217	71.6			

Table 1. Prevalence of specific phobia and any specific fears in a population examined
at age 70, 75 and 79 years (N=303)

\*Chi-square test of differences in proportions between women and men in number of examinations with condition (0-3)

	Fears with prominent anxiety		χ2 df p			Fears w other co	ith social or onsequences	χ2	df	р
	Ν	%				 Ν	%			
Age 70										
Men	4	3.8				5	4.7			
Women	30	15.2	9.1	1	0.003	41	20.8	13.9	1	< 0.001
Total	34	11.2				46	15.2			
Age 75										
Men	0	0				1	0.9			
Women	22	11.2	12.8	1	< 0.001	36	18.3	19.3	1	< 0.001
Total	22	7.3				37	12.2			
Age 79										
Men	2	1.9				2	1.9			
Women	13	6.6	3.8	1	0.05	41	20.8	20.1	1	< 0.001
Total	15	5.0				43	14.2			

# Table 2. Prevalence of fears with prominent anxiety and fears with social or other consequences at age 70. 75 and 79 years (N=303)

#### Table 3. Course of specific phobia over nine years

Individuals with specific phobia at any time during the study (N=44).										
	At 3 examinations		At 2 exan	ninations	At 1 exan	nination	At any examination			
	Ν	%	Ν	%	Ν	%	Ν	%		
Any specific fears	29	65.9	12	27.3	3	6.8	44	100.0		
Specific phobia	5	11.4	9	20.5	30	68.2	44	100.0		
Sub-threshold fears	-	-	16	36.4	19	43.2	35	79.5		
No specific fears	-	-	3	6.8	12	27.3	15	34.1		

#### Individuals with specific phobia at age 70 (N=30)

	At both 75 & 79		At age 75	only	At age 79	only	At age 75 or 79		
	Ν	%	Ν	%	Ν	%	Ν	%	
Any specific fears	21	70.0	6	20.0	1	3.3	28	93.3	
Specific phobia	5	16.7	5	16.7	2	6.7	12	40.0	
Sub-threshold fears	10	33.3	7	23.3	5	16.7	23	76.7	
No specific fears	2	6.7	1	3.3	6	20.0	9	30.0	

# Table 4. Possible predictors of persistent specific

#### phobia (SP) among individuals with SP at age 70 (N=30)

	No SP at a at age 75 a	follow-up und 79	SP at age ' and/or ag	75 e 79	
	(N=	18)	(N=	:12)	Fisher's
Predictors	Ν	%	Ν	%	exact test p
Female gender	16	88.9	12	100.0	0.50
Type of fear at age 70					
Animals	14	77.8	10	83.3	1.0
Natural environment	14	77.8	9	75.0	1.0
Specific situations	10	55.6	9	75.0	0.44
Blood-injection-injury	5	27.8	1	8.3	0.36
Other	6	33.3	3	25.0	0.70
Any other anxiety disorder at age 70*	7	38.9	4	33,0	1.0
Depression at age 70	5	25.0	3	25.0	1.0

\*Obsessive-compulsive disorder, social phobia, panic attacks

or generalized anxiety disorder

#### Table 5. Possible predictors of persistent specific fears among individuals with any specific fear at age 70 (N=179)

	No specific fear at follow- up at age 75 and 79 (N=43)		Any specific fear at age 75 and/or age 79		Bivariate regression					Multivariate regression*			
			(N=136)										
Predictor	Ν	%	Ν	%	OR	95% CI	Wald $\chi^2$	р	OR	95% CI	Wald $\chi^2$	р	
Female gender	27	62.8	116	85.3	3.3	1.9-5.9	17.05	< 0.001	3.0	1.7-5.3	14.05	< 0.001	
Specific phobia at age 70	2	4.7	28	20.6	3.9	1.8-8.4	12.12	< 0.001	2.7	1.3-5.9	6.64	0.010	
Any other anxiety disorder at age 70**	1	2.3	18	13.2	3.0	1.3-6.9	6.59	0.010	1.9	0.8-4.7	2.18	0.14	
Depression at age 70	5	11.6	21	15.4	1.4	0.7-2.9	1.004	0.22					

Any specific fear: specific phobia or sub-threshold fears

\*Including all factors with p<0,05 in bivariate analysis

\*\*Obsessive-compulsive disorder, social phobia, panic attacks or generalized anxiety disorder

Odds ratios calculated with generalized estimating equations