

# Burden, anxiety and depressive symptoms in partners – course and predictors during the first two years after stroke

V.C.M. Cox<sup>1</sup>, J.J.E. Welten<sup>1</sup>, V.P.M. Schepers<sup>2</sup>, M. Ketelaar<sup>1</sup>, W.J. Kruithof<sup>2</sup>, C.M. van Heugten<sup>3,4</sup>, J.M.A. Visser-Meily<sup>1,2</sup>

<sup>1</sup> Center of Excellence for Rehabilitation Medicine, UMC Utrecht Brain Center, University Medical Center Utrecht, and De Hoogstraat Rehabilitation <sup>2</sup> Department of Rehabilitation, Physical Therapy Science & Sports, UMC Utrecht Brain Center, University Medical Center Utrecht <sup>3</sup> Department of Neuropsychology and Psychopharmacology, Faculty of Psychology and Neuroscience, Maastricht University <sup>4</sup> School for Mental Health and Neuroscience, Faculty of Health, Medicine and Life Sciences, Maastricht University Medical Center

## Background

It is not clear how burden, anxiety and depressive symptoms develop in partners from the moment of stroke. Literature shows contradictory results; and although interrelated, burden, anxiety and depressive symptoms were not yet studied together.

## Methods

- Restore4Stroke Cohort study, 215 couples
- CSI (burden), HADS (anxiety, depression), UPCC (pro-active coping), GSES (self-efficacy)
- Mixed model analysis

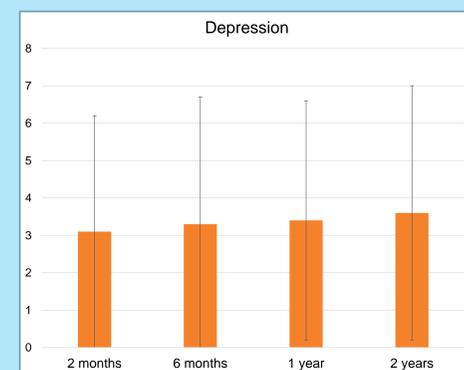
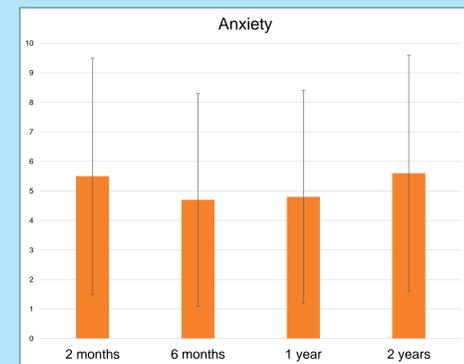
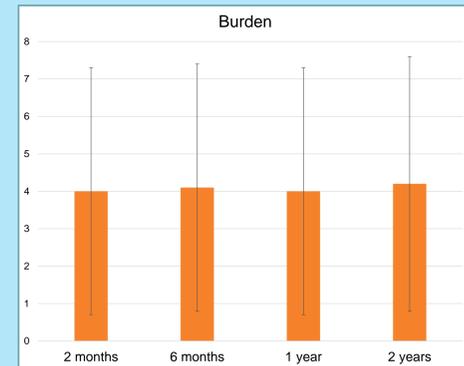
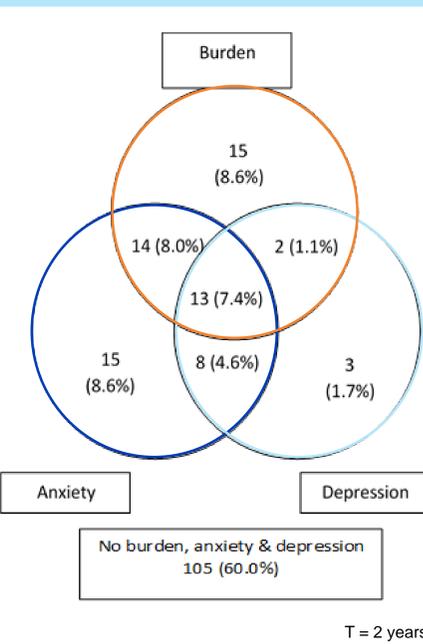
## Aim

To comprehensively study the courses and predictors of burden, anxiety and depressive symptoms in partners of patients with stroke during the first two years after stroke.

## Results

Patients: 64.3 yrs, 78.6% male, 94.9 % ischemic stroke, mean NIHSS 2.6

Partners: 62.6 yrs, 21.9% male



Predictors	Burden		Anxiety		Depressive symptoms	
	Estimate (95% CI)	p-value	Estimate (95% CI)	p-value	Estimate (95% CI)	p-value
Intercept	4.35 (-0.39; 9.10)	0.072	5.74 (0.61; 10.87)	0.028	2.83 (-1.08; 6.74)	0.156
Time (months)	0.01 (-0.01; 0.04)	0.246	-0.23 (-0.43; -0.03)	0.023	0.01 (-0.01; 0.02)	0.341
Quadratic effect of time	-	-	0.01 (0.00; 0.01)	<0.001	-	-
Cubic effect of time	-	-	-	-	-	-
<b>Partner characteristics</b>						
Age in years	-0.03 (-0.06; 0.00)	0.049	-0.03 (-0.06; 0.01)	0.155	0.04 (0.01; 0.06)	0.006
Age in years*time	-	-	0.00 (0.00; 0.00)	0.308	-	-
Male sex	-0.39 (-1.12; 0.35)	0.303	-0.25 (-0.99; 0.50)	0.512	0.21 (-0.41; 0.84)	0.505
Male sex*time	-	-	-	-	-	-
Higher education	0.86 (0.17; 1.55)	0.014	0.08 (-0.62; 0.78)	0.819	-0.10 (-0.68; 0.49)	0.745
Higher education*time	-	-	-	-	-	-
Burden (CSI)	-	-	0.28 (0.19; 0.36)	<0.001	0.16 (0.09; 0.24)	<0.001
Burden (CSI)*time	-	-	-	-	-	-
Anxiety (HADS-A)	0.22 (0.15; 0.29)	<0.001	-	-	0.42 (0.36; 0.48)	<0.001
Anxiety (HADS-A)*time	-	-	-	-	-	-
Depressive symptoms (HADS-D)	0.18 (0.10; 0.27)	<0.001	0.56 (0.48; 0.64)	<0.001	-	-
Depressive symptoms (HADS-D)*time	-	-	-	-	-	-
Proactive coping (UPCC)	0.01 (-0.69; 0.72)	0.967	-0.04 (-0.86; 0.79)	0.930	-1.27 (-1.86; -0.68)	<0.001
Proactive coping (UPCC)*time	-	-	0.01 (-0.02; 0.05)	0.488	-	-
Self-efficacy (GSES)	0.07 (-0.01; 0.16)	0.096	-0.12 (-0.20; -0.03)	0.006	0.00 (-0.07; 0.07)	0.967
Self-efficacy (GSES)*time	-	-	-	-	-	-
<b>Patient characteristics</b>						
Stroke severity (NIHSS)	0.15 (0.02; 0.29)	0.026	-	-	-	-
Stroke severity (NIHSS)*time	-0.01 (-0.01; 0.00)	0.108	-	-	-	-
ADL independence (BI)	-0.07 (-0.15; 0.02)	0.127	0.02 (-0.06; 0.10)	0.557	0.02 (-0.05; 0.08)	0.642
ADL independence (BI)*time	-	-	-	-	-	-
Cognitive functioning (MoCA)	-0.10 (-0.19; -0.01)	0.027	0.08 (-0.01; 0.17)	0.067	-0.05 (-0.13; 0.02)	0.154
Cognitive functioning (MoCA)*time	-	-	-	-	-	-
Anxiety (HADS-A)	0.09 (0.02; 0.16)	0.013	0.06 (-0.02; 0.13)	0.148	-0.03 (-0.09; 0.04)	0.446
Anxiety (HADS-A)*time	-	-	-	-	-	-
Depressive symptoms (HADS-D)	0.16 (0.10; 0.23)	<0.001	0.05 (-0.05; 0.15)	0.346	0.08 (0.01; 0.15)	0.019
Depressive symptoms (HADS-D)*time	-	-	-0.01 (-0.01; 0.00)	0.064	-	-

CSI = Caregiver Strain Index; HADS-A = Hospital Anxiety and Depression Scale—Anxiety subscale; HADS-D = Hospital Anxiety and Depression Scale—Depression subscale; UPCC = Utrecht Proactive Coping Competence Scale; GSES = General Self-Efficacy Scale; NIHSS = National Institutes of Health Stroke Scale; ADL = activities of daily living; BI = Barthel Index; MoCA = Montreal Cognitive Assessment

## Take home messages

- The burden, anxiety and depressive symptoms experienced by partners of patients with stroke become chronic.
- Special attention should be given to anxiety, because although it decreases first, it increases again later on.
- Health care professionals should monitor both patients and partners and pay particular attention to the partners of patients with severe stroke, low cognitive functioning and depressive symptoms.
- Partners should be screened early after stroke for burden, anxiety and depressive symptoms, since each of these is a risk factor for developing the other two negative outcomes. Other risks factors are higher education, low pro-active coping and low self-efficacy. This will enable identification of partners at risk.

