

Universitair Medisch Centrum Groningen

Cognitieve stoornissen bij depressie



19 mei 2015 – Symposium ‘Nooit te oud om te leren!’

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DISCLOSURE BELANGEN MARIJ ZUIDERSMA

(potentiële) belangenverstrengeling	Geen
Voor bijeenkomst mogelijk relevante relaties met bedrijven	
<ul style="list-style-type: none">Sponsoring of onderzoeksgeldHonorarium of andere (financiële) vergoedingAandeelhouderAndere relatie, namelijk ...	<ul style="list-style-type: none">

DEPRESSION IN LATE LIFE



Point prevalence MDD: 7.2%



Point prevalence depressive symptoms: 17.1%

Luppa et al. JAD 2012

DEPRESSION AND COGNITIVE DEFICITS

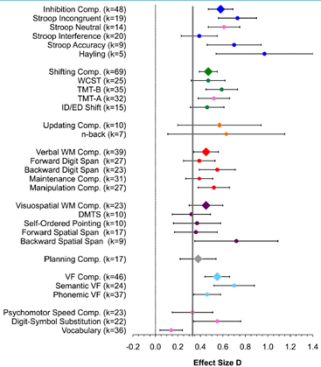


DEPRESSION AND COGNITIVE DEFICITS



Depression – cognitive deficits

DEPRESSION AND COGNITIVE DEFICITS



Relation between MDD and executive function

113 studies

3936 MDD

3771 controls

Snyder, Psychological Bulletin 2013

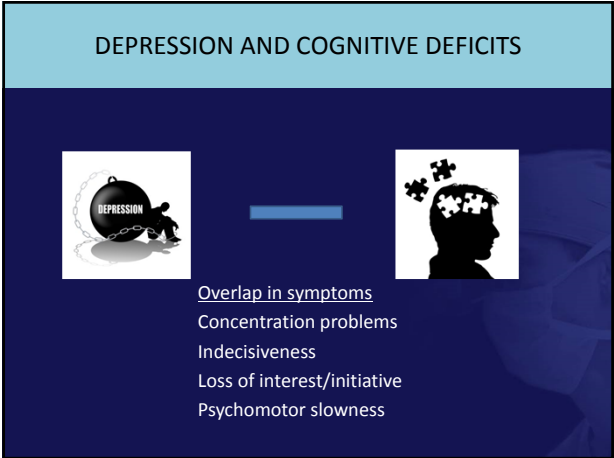
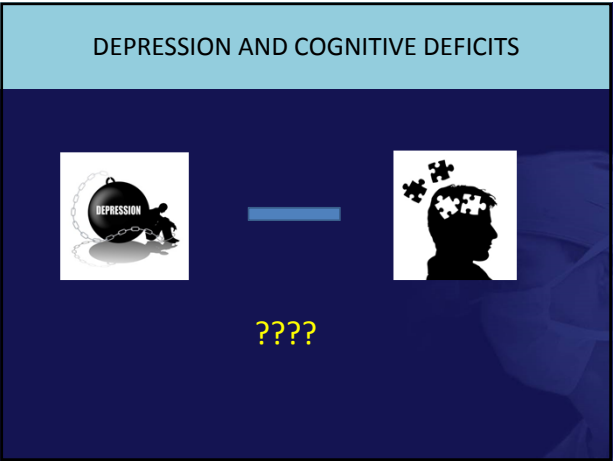
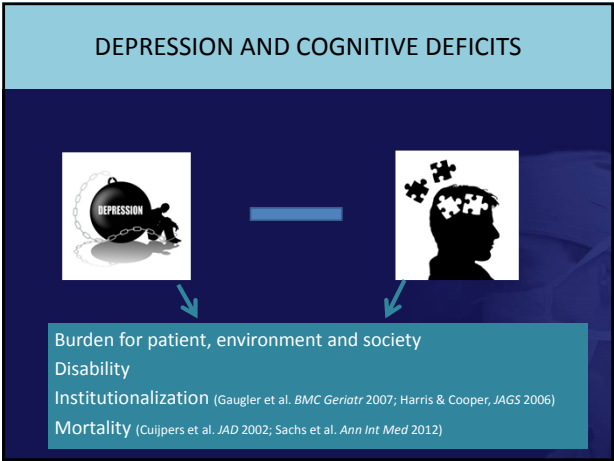
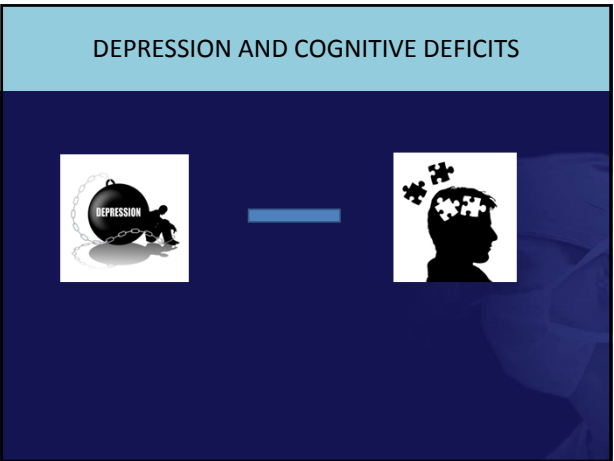
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Cognitive deficits in MDD

Table 3. Associations between depression status and depression severity with cognitive functioning

	DEPRESSED PERSONS (n = 378) MEAN (SE)	NON-DEPRESSED CONTROLS (n = 132) MEAN (SE)	F	COHEN'S D		ASSOCIATION WITH DEPRESSION SEVERITY		
				p	D	β	t	p
Episodic memory								
Immediate recall	31.8 (0.34)	33.4 (0.61)	4.56	0.03	0.24	-0.16	-3.32	<0.001
Delayed recall	5.89 (0.11)	6.37 (0.20)	4.05	<0.05	0.22	-0.14	-2.89	0.004
Z-score episodic memory	-0.04 (0.05)	0.17 (0.08)	5.17	0.02	0.23	-0.16	-3.52	<0.001
Processing speed								
Stroop card I	20.5 (0.28)	19.6 (0.50)	2.19	0.14	0.17	-0.05	-1.08	0.28
Stroop card II	26.6 (0.34)	24.3 (0.61)	10.81	0.001	0.35	-0.22	-4.79	<0.001
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Digit span forward	8.17 (0.09)	8.09 (0.16)	0.18	0.68	0.05	-0.10	-2.03	0.04
Digit span backward	5.29 (0.10)	5.41 (0.17)	0.34	0.56	0.06	-0.07	-1.54	0.12
Z-score working memory	0.004 (0.04)	0.013 (0.08)	0.01	0.92	0.01	-0.10	-2.11	0.04

Korten et al. International Psychogeriatrics 2014



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Am J Psychiatry 136:7, July 1979

Pseudodementia

BY CHARLES E. WELLS, M.D.

Pseudodementia is the syndrome in which dementia is mimicked or caricatured by functional psychiatric disorders. The author describes 10 patients with pseudodementia and compares its clinical features with those of true dementia. The syndrome occurred in patients with various psychiatric diagnoses, but a striking feature in most patients was marked dependency. The recognition of this clinical syndrome should obviate the need for many neurological diagnostic studies and lead to earlier and more effective psychiatric treatment.

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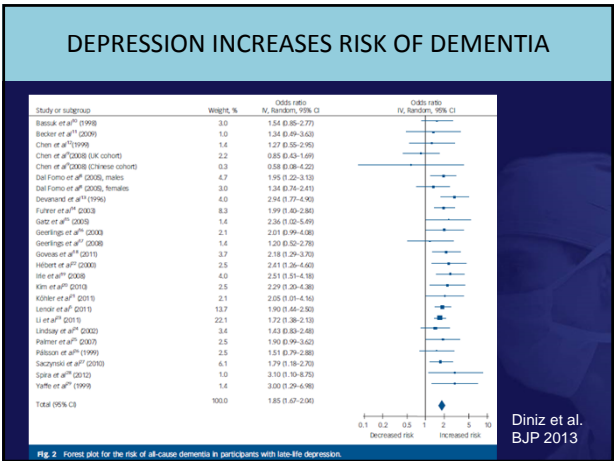
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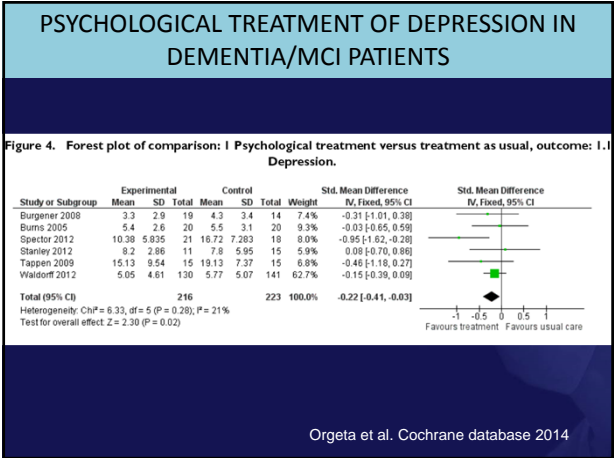
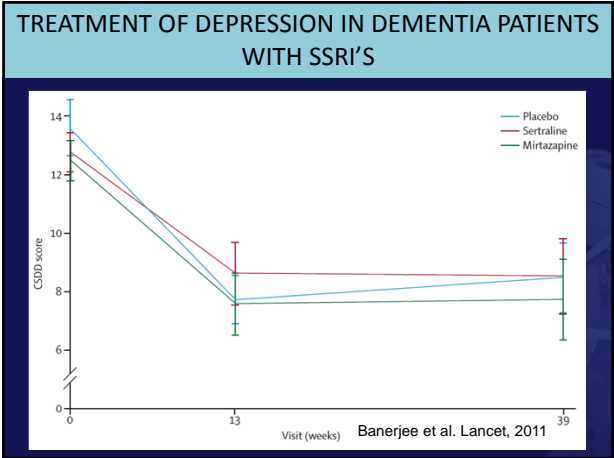
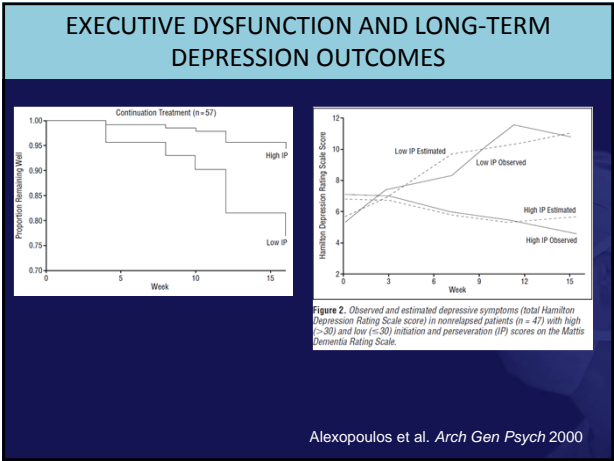
"Patients with pseudodementia are at risk of therapeutic neglect and superfluous diagnostic procedures."



POPULATION ATTRIBUTABLE RISK OF ALZHEIMER'S DISEASE

	Prevalence*	PAR (95% CI)	Number of attributable cases in 2010 (95% CI)†
Europe			x1000
Diabetes mellitus	6-9%	3-1% (1-4-5-0)	222 (98-364)
Midlife hypertension	12-0%	6-8% (1-9-13-0)	492 (136-934)
Midlife obesity	7-2%	4-1% (2-4-6-2)	299 (172-448)
Physical inactivity	31-0%	20-3% (5-6-35-6)	1461 (401-2564)
Depression	18-5%	10-7% (7-2-14-5)	774 (520-1049)
Smoking	26-6%	13-6% (3-8-24-2)	978 (277-1745)
Low educational attainment	26-6%	13-6% (8-5-18-6)	978 (614-1342)
Combined‡	..	54-0% (27-2-73-7)	3891 (1959-5311)
Adjusted combined§	..	31-4% (15-3-46-0)	3033 (1472-4332)

Norton et al. Lancet Neurology 2014



TO WHAT EXTENT ARE COGNITIVE DEFICITS A
MANIFESTATION OR BYPRODUCT OF DEPRESSION?



TO WHAT EXTENT ARE COGNITIVE DEFICITS A
MANIFESTATION OR BYPRODUCT OF DEPRESSION?



TO WHAT EXTENT IS DEPRESSION A SIGNAL OF
BEGINNING COGNITIVE DISORDERS?

REMITTED DEPRESSION AND COGNITIVE
PERFORMANCE IN YOUNG AND OLD ADULTS

Meta-analysis by Bora et al. 2013: Cognitive deficits in all domains in remitted patients compared to healthy controls

Cognitive domain	No of studies	MDD (n)	HC (n)	Cohen's d	95% CI	p
Global	30	895	993	0.47	0.38-0.57	<0.001
Processing speed	20	647	745	0.47	0.31-0.64	<0.001
Visual memory	12	393	495	0.54	0.33-0.76	<0.001
Verbal memory	15	428	460	0.48	0.23-0.73	<0.001
Executive function	24	714	794	0.59	0.44-0.74	<0.001
Working memory	14	475	496	0.39	0.20-0.57	<0.001
Attention	10	228	231	0.53	0.33-0.72	<0.001

Bora et al. *Psychological Medicine* 2013

REMITTED DEPRESSION AND COGNITIVE
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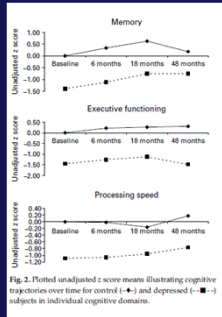
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Onset first episode between 50-65 years: even more pronounced

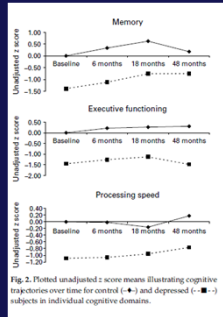
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COGNITIVE DEFICITS PERSIST EVEN AFTER REMISSION
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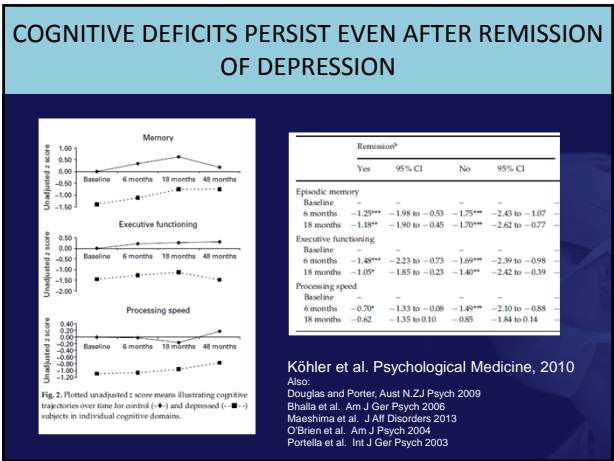
Köhler et al. *Psychological Medicine*, 2010

COGNITIVE DEFICITS PERSIST EVEN AFTER REMISSION
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	Remission ^b			
	Yes	95% CI	No	95% CI
Episodic memory				
Baseline	—	—	—	—
6 months	-1.25**	-1.98 to -0.53	-1.75**	-2.43 to -1.07
18 months	-1.18**	-1.90 to -0.45	-1.70**	-2.62 to -0.77
Executive functioning				
Baseline	—	—	—	—
6 months	-1.48**	-2.23 to -0.73	-1.69**	-2.39 to -0.98
18 months	-1.05*	-1.85 to -0.23	-1.40**	-2.42 to -0.39
Processing speed				
Baseline	—	—	—	—
6 months	-0.70*	-1.33 to -0.08	-1.48**	-2.10 to -0.88
18 months	-0.62	-1.35 to 0.10	-0.85	-1.84 to 0.14

Köhler et al. *Psychological Medicine*, 2010



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DO COGNITIVE DEFICITS PERSIST EVEN WHEN DEPRESSION REMITS?

NESDO
Netherlands Study on Depression in Older Persons

DEPRESSION AND COGNITIVE DEFICITS

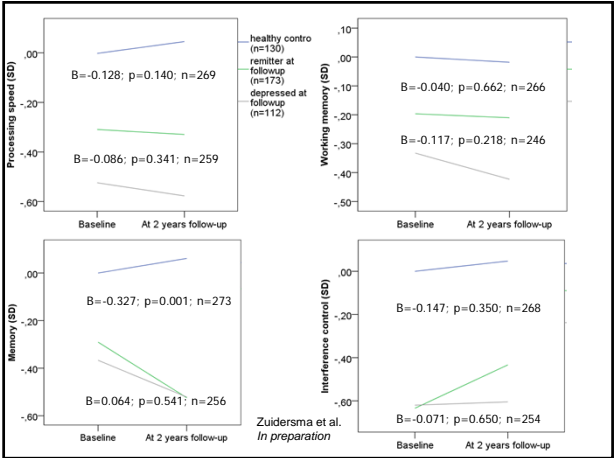
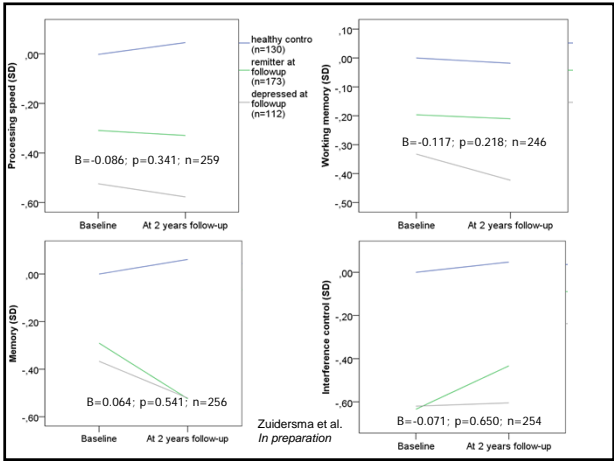
CROSSECTIONAL ASSOCIATIONS

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Korten et al. International Psychogeriatrics, 2014



COGNITIVE DEFICITS PERSIST EVEN AFTER REMISSION OF DEPRESSION

The diagram illustrates the persistence of cognitive deficits after remission of depression. It features a central blue arrow pointing right, flanked by two silhouettes of heads. The left head is labeled 'DEPRESSION' and the right head is labeled 'REMISSION'. Above the arrow, the text 'COGNITIVE DEFICITS PERSIST EVEN AFTER REMISSION OF DEPRESSION' is displayed.

COGNITIVE DEFICITS PERSIST EVEN AFTER REMISSION OF DEPRESSION

Potential explanations

-Depressed group may have contained preclinical Alzheimer's disease

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-Common underlying mechanism (vascular lesions, white matter hyperintensities)

ARE COGNITIVE DEFICITS A MANIFESTATION OR BYPRODUCT OF DEPRESSION?



ARE COGNITIVE DEFICITS A MANIFESTATION OR BYPRODUCT OF DEPRESSION?

NOT ALWAYS



ARE COGNITIVE DEFICITS A MANIFESTATION OR BYPRODUCT OF DEPRESSION?

NOT ALWAYS



IS IT REALLY DEPRESSION?

DEPRESSION INSTRUMENTS MEASURE ONLY DEPRESSION?



DEPRESSION INSTRUMENTS MEASURE ONLY DEPRESSION?



'DEPRESSIVE' SYMPTOM PROFILE AND COGNITIVE DEFICITS IN 303 OLDER PERSONS WITHOUT DEPRESSION

Backman et al. J Abnorm Psychol 1996

'DEPRESSIVE' SYMPTOM PROFILE AND COGNITIVE DEFICITS IN 303 OLDER PERSONS WITHOUT DEPRESSION

Factor analysis on 8 DSM symptoms of depression

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Factor analysis on 8 DSM symptoms of depression

Mood-related symptoms

- Dysphoria
- Appetite disturbance
- Feelings of guilt
- Suicidal thoughts

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Factor analysis on 8 DSM symptoms of depression

Mood-related symptoms

- Dysphoria
- Appetite disturbance
- Feelings of guilt
- Suicidal thoughts

Motivation-related symptoms

- Lack of interest
- Concentration difficulties
- Psychomotor change
- Loss of energy

Backman et al. J Abnorm Psychol 1996

‘DEPRESSIVE’ SYMPTOM PROFILE AND COGNITIVE DEFICITS

IN 303 OLDER PERSONS WITHOUT DEPRESSION

Factor analysis on 8 DSM symptoms of depression

Mood-related symptoms

Motivation-related symptoms

Table 3

Correlations Among Independent and Dependent Variables

Variable	1	2	3	4	5	6	7	8	9
1. Age	—	-.08	.10	.00	-.01	-.23**	-.23**	-.28**	-.27**
2. Education		—	-.23**	-.05	-.02	.20**	.24**	.28**	.20**
3. Gender*			—	.08	.13*	-.03	-.02	-.07	-.01
4. Mood-related symptoms				—	.12*	-.08	-.11	-.12*	-.11
5. Motivation-related symptoms					—	.19**	-.19**	-.12*	-.12*
6. FR-RR						—	.51**	.48**	.30**
7. FR-SR							—	.55**	.51**
8. FR-O								—	.75**
9. CR-O									—

Note.

FR = free recall; RR = rapidly presented random words; SR = slowly presented random words; O = organizable words; CR = cued recall.

* Men were coded as 1, and women were coded as 2.

p < .05. **p < .01.

Backman et al. J Abnorm Psychol 1996

‘DEPRESSIVE’ SYMPTOM PROFILE AND PRESENCE OF

ALZHEIMER IN NON-DEPRESSED OLDER PERSONS


TABLE 3. Symptoms of depression reported by the collateral sources of controls and subjects with DAT according to the CDR scale.


	Initial evaluation		15-Month evaluation			34-Month evaluation		
	Controls	CDR 1	Controls	CDR 1	CDR 2	Controls	CDR 1	CDR 2
n =	58	44	55	16	13	51	6	10
Dysphoria (%)	16	39	2	19	25	10	0	30
Appetite disturbance (%)	5	11	4	19	8	2	0	0
Sleep disturbance (%)	16	14	11	13	15	14	0	30
Energy (%)	14	52**	11	56*	46	16	50	70
Psychomotor change (%)	5	27	7	50*	67**	12	33	40*
Loss of interest (%)	0	39**	0	56**	77**	2	40	70**
Guilt (%)	0	11	0	13	0	0	17	20
Thinking/concentration disturbance (%)	2	86**	2	100**	100**	4	100**	90**
Thoughts of death or suicide (%)	2	20	0	6	31*	0	20	20

Comparisons between controls and subjects with dementia were made using Fisher's exact χ^2 . * $p \leq 0.001$, ** $p \leq 0.0001$.

Burke et al. Alzheimer's disease and associated disorders, 1988

DEPRESSION AND COGNITIVE DEFICITS





Overlap in symptoms

Concentration problems

Indecisiveness

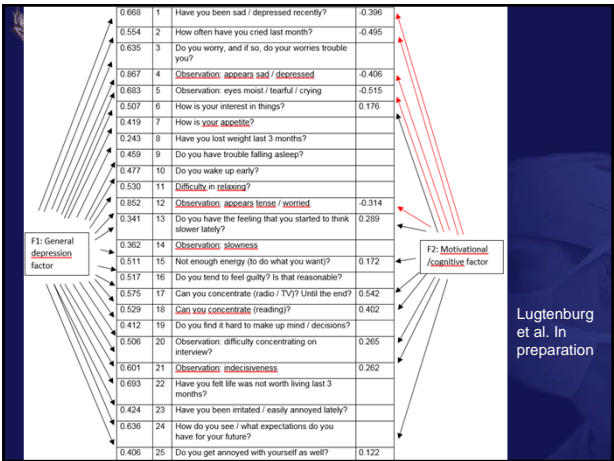
Loss of interest/initiative

Psychomotor slowness

AMSTERDAM STUDY OF THE ELDERLY (AMSTEL)

- N=1908 older persons from general population
- No dementia, no cognitive problems
- GMS agecat to assess depressive symptoms
- 2 years later: incident dementia assessed (n=93 cases)
- Bifactor analysis on depressive symptoms

Lugtenburg et al. In preparation



DEPRESSION INCREASES RISK OF DEMENTIA

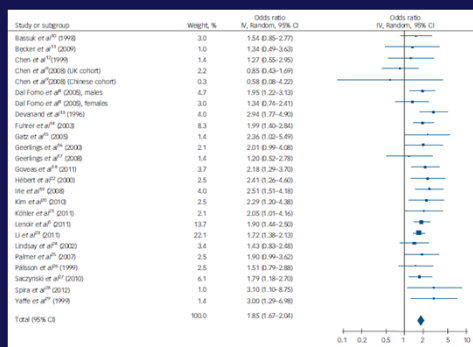
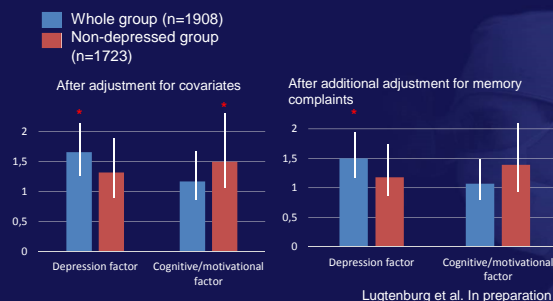


Fig 2 Forest plot for the risk of all-cause dementia in participants with late-life depression.

Diniz et al.
BJP 2013

AMSTERDAM STUDY OF THE ELDERLY (AMSTEL)

Depressive symptom profiles and incident dementia after 2 years



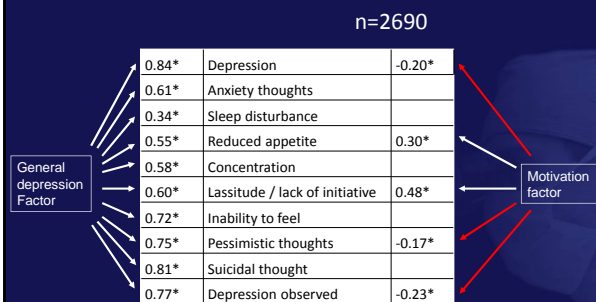
Lugtenburg et al. In preparation

SWEDISH NATIONAL STUDY ON AGING AND CARE IN KUNGSHOLMEN (SNAC-K)

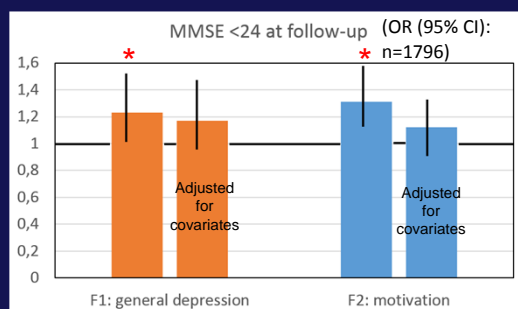
- N=2690 older persons from general population
- No dementia, no cognitive problems at baseline
- MADRS to assess depressive symptoms
- **Bifactor analysis on depressive symptoms**
- At baseline and 6 years later: cognitive performance

Zuidersma et al. In preparation

SWEDISH NATIONAL STUDY ON AGING AND CARE IN KUNGSHOLMEN (SNAC-K)



SWEDISH NATIONAL STUDY ON AGING AND CARE IN KUNGSHOLMEN (SNAC-K)



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SUMMARY

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- Motivational and cognitive symptoms of 'depression' occur in non-depressed older people with cognitive deficits

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- In older people from the general population depression instruments capture variance due to depression and variance unrelated to depression (dominated by motivational/cognitive symptoms)

SUMMARY

- Cognitive deficits persist even after remission of depression
- Motivational and cognitive symptoms of 'depression' occur in non-depressed older people with cognitive deficits
- In older people from the general population depression instruments capture variance due to depression and variance unrelated to depression (dominated by motivational/cognitive symptoms)
- Both depression and reduced motivation in the absence of depression are related to an increased risk of dementia and cognitive decline

Case – Bep, 66 years



CASE: BEP, 66 YEARS

Intake

Complaints:

- loss of initiative
- loss of energy
- Rumination
- Tense
- stopped hobbies

IDS-total score: 45

16 wk treatment with 20 mg Citalopram of GP doesn't help

→ Conclusion after intake: moderate to severe depressive disorder with comorbid generalized anxiety disorder

CASE: BEP, 66 YEARS



START TREATMENT AT UCP

- Shortly after intake complete loss of daily structure
- Start CBT treatment
- Citalopram → duloxetine

COGNITIVE SCREENING

- No subjective cognitive complaints
- Father known with Alzheimer's disease at age 50-60
- MMSE 27/30
- CAMCOG 88/102
- No indication for cognitive disorder

CASE: BEP, 66 YEARS



EFFECTIVITY CBT

- IDS: 45 → 38
- Discrepancy between sessions and home
- Subjective complaints of memory and planning (housework and new telephone)
- Not effective

CASE: BEP, 66 YEARS



MEMORY CLINIC

- Increasing deficits in memory and planning → not enough for MCI or dementia
- No neurological abnormalities
- No abnormalities in liquor (β -amyloid-42, total tau, phosphorylated tau)
- Memory and executive deficits not large enough for MCI or dementia
- Alzheimer's disease unlikely

CASE: BEP, 66 YEARS



FOLLOW-UP POLICY: DULOXETINE → NORTRIPTYLINE

- IDS 38 → 18
- Bep feels well
- Husband still complains about loss of initiative / being passive

Additional information from liquor: abnormal β -amyloid-40

→ Risk factor for Alzheimer's disease

CASE: BEP, 66 YEARS



DEPRESSIVE SYMPTOM PROFILES

	START	DULOXETINE	NORTRIPTYLINE
SOMSCORE	45	38	18
Somber voelen			
Angstig of gespannen voelen			
Gedachten aan de dood en zelfmoord			
Negatieve toekomstverwachtingen			
Negatief zelfbeeld			
Te vroeg ontwaken			
Inslaapproblemen			
Prikkelbaar voelen			
Verminderde eetlust			
Gewichtsafname			
Concentratieproblemen / besluiteloos			
Algemene interesse			
Gebrekk aan energie			
Zwaar gevoel of gebrek aan energie			
Traagheid in denken, spreken, bewegen			
Pijnklachten			
Overige lichamelijke klachten			
Verstopping en/of diarree			
Gevoeligheid voor afwijzing anderen			
Slaapproblemen gedurende de nacht			
Te veel slapen			
Geen reactieve stemming			
Dagsemmeling stemming			
Andere kwaliteit van de stemming			
Toegenomen eetlust			
Gewichtstoename afgelopen 2 weken			
Geen plezier ervaren en/of genieten			
Afgenomen belangstelling voor seks			

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CONCLUSION

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- Cognitive deficits are not merely a manifestation of depression

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- Clinicians must take cognitive deficits in depressed older persons seriously

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- Cognitive deficits are not merely a manifestation of depression
- Clinicians must take cognitive deficits in depressed older persons seriously
- Both depression and a specific 'depressive' symptom profile dominated by loss of initiative and absence of low mood are associated with cognitive decline

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Thank you

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