Cognitive and brain health of LGBTQIA+ older adults

Riccardo Manca

MSCA Postdoctoral Fellow
University of Parma (Italy)

Disclaimer on terminology

Sexual minorities (SM) -- sexual orientation

- **Sexual desire/attraction**
- **Sexual behaviour**
- **Relationship type**
- **Self-identification**

Gender minorities (GM) -- gender identity

- **Gender identity "diagnoses"**
- **Self-identification**

Outline

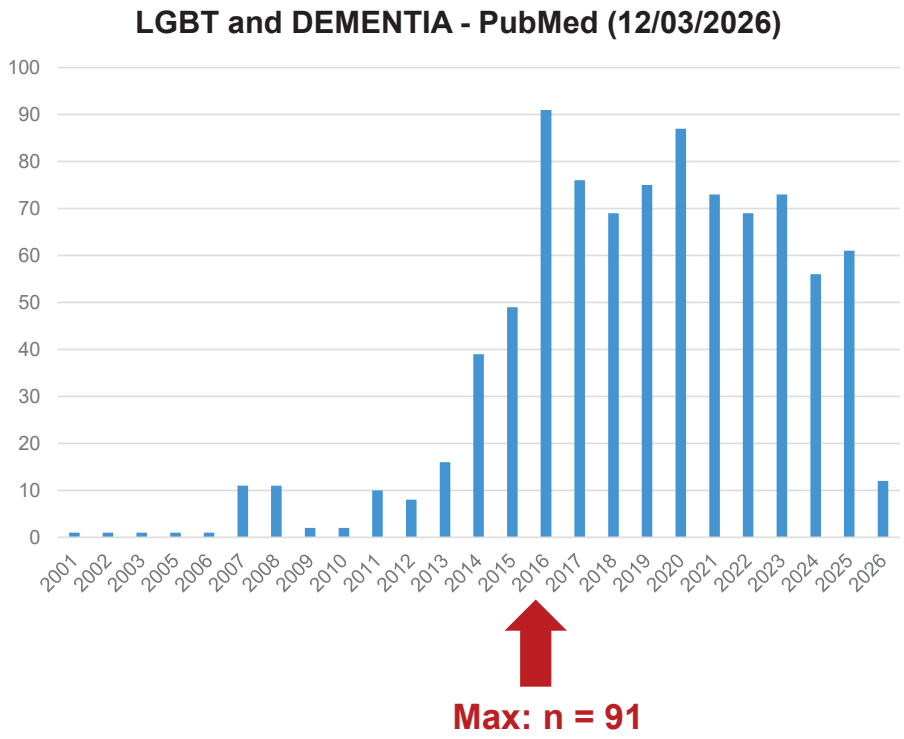
- Brief background
- Cognitive and brain health disparities
- General and specific risk factors
- Opportunities for neuropsychologists

Background

Why study cognitive health of SGM older adults?

Lack of research

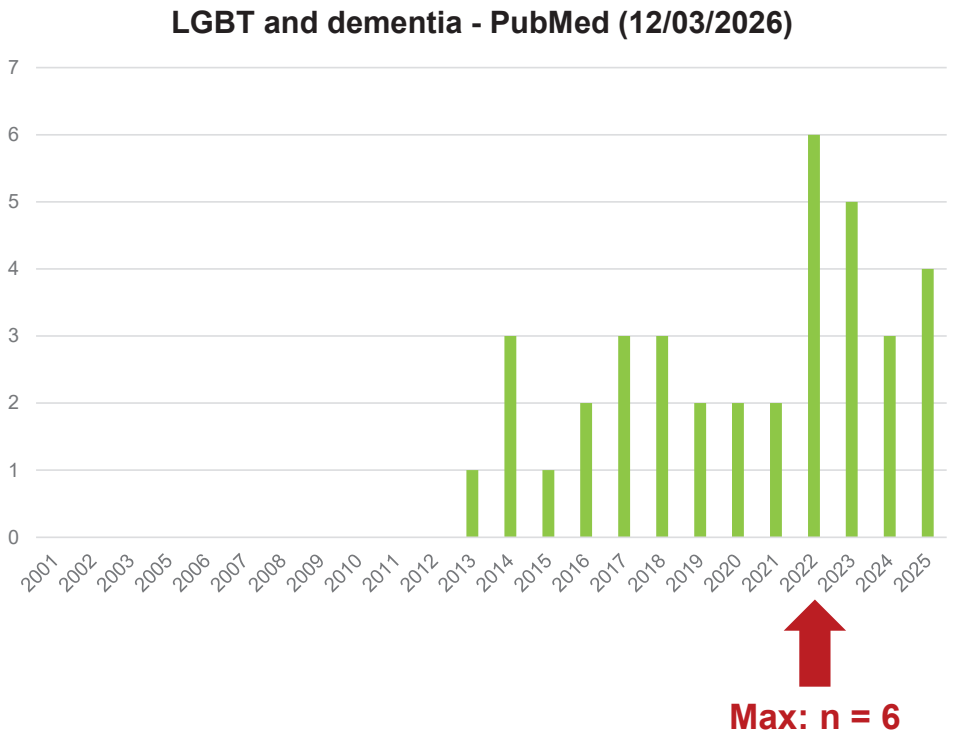
Sexual health



Max: n = 91

vs

Cognitive health



Max: n = 6

Small population

Source: Office for National Statistics - **Census 2021 | England and Wales**

Minority sexual orientations (%)

Age	Gay or lesbian	Bisexual
16 to 24	2.11	4
25 to 34	2.59	2.37
35 to 44	1.97	1.15
45 to 54	1.57	0.61
55 to 64	1.11	0.36
65 to 74	0.57	0.2
75+	0.24	0.09

Self-identified as trans (%)

Age	Trans
16 to 24	1.00
25 to 34	0.77
35 to 44	0.64
45 to 54	0.47
55 to 64	0.33
65 to 74	0.25
75+	0.22

How to reach this population?

SGM people and neurology research

Scoping review

Rosendale et al. (2021) *JAMA Neurol*

Characteristic	No. (%)
Total, No.	348
Sexual orientation/behavior, No.	297
Lesbian only	0
Gay only	193 (65.0)
Men who have sex with men	19 (6.4)
Bisexual only	15 (5.1)
Gay and bisexual men	44 (14.8)
Other or multiple sexual orientations[a]	26 (8.8)
Gender identity[b]	
Transgender women	24 (6.9)
Transgender men	6 (1.7)
Both transgender women and men	12 (3.4)
Cisgender people only	289 (83.0)
Gender inclusive/multiple gender identities	15 (4.3)

65%

83%

Current knowledge

Subjective cognitive decline

SCD - Summary

Current picture on SCD risk in the LGBTQIA+ community:

- Highest SCD risk in **transgender people**
- Among SM women: **bisexual > heterosexual**
- Cognitive domains: **SCD for attention > SCD for memory**
- Intersectionality issues in GM: **Ethnic minority > White transgender**

Brown & Patterson (2020) *J Alzheimer's Dis*
Cicero et al. (2023) *J Gerontol*
Seelman (2019) *Gerontologist*
Jacob et al. (2021) *J Psychiatr Res*

SCD

Most consistent finding:

SGM people show higher rates of SCD than heterosexual and cisgender people

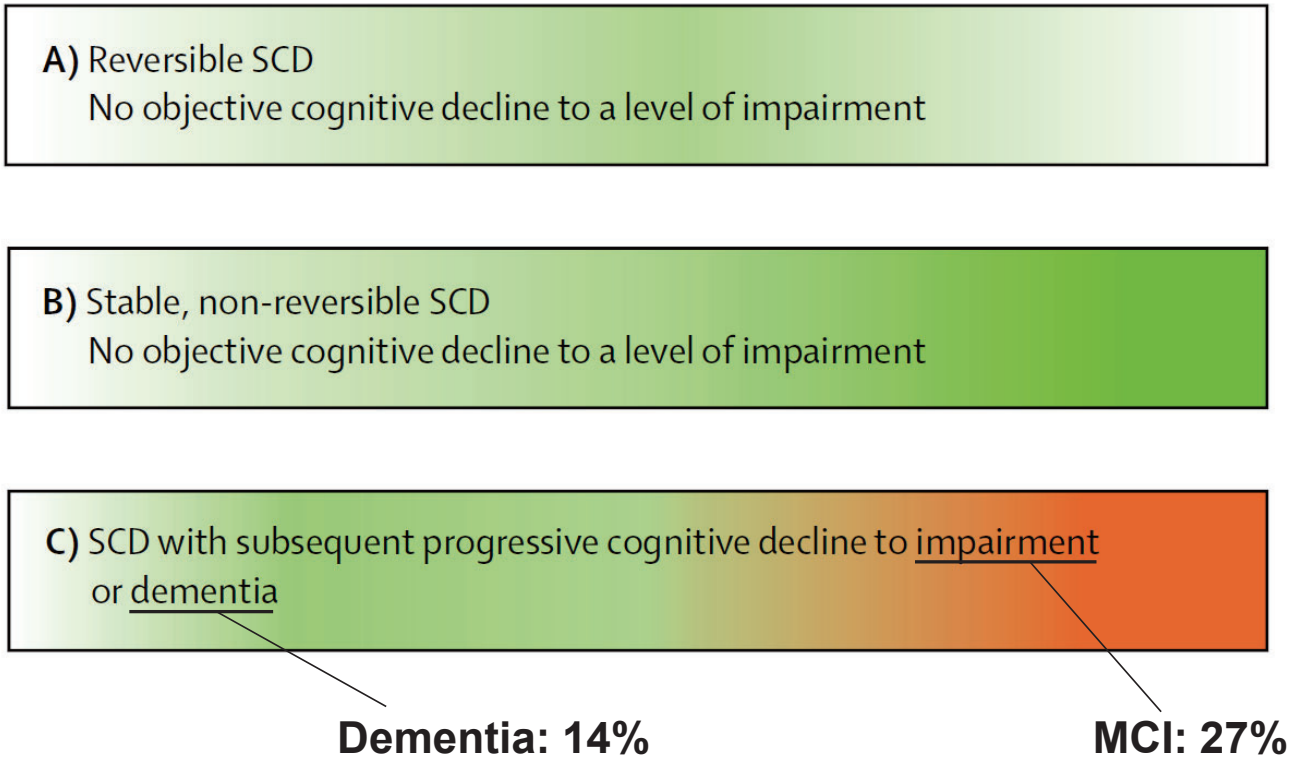
Romanelli et al. (2023) *LGBT Health*

LIMITATIONS:

- SCD poorly defined, usually based on **one question only**
- **No cognitive assessment** to confirm absence of cognitive deficits
- Lack of biomarker data to support any diagnosis
- No longitudinal studies to test progression to MCI/dementia

SCD | *Criticism*

High heterogeneity of clinical trajectories of SCD:



Jessen et al. (2020)
Lancet Neurol

SCD | *Why prognosis for SCD is so uncertain?*

Comijs et al. (2002)
J Affect Disord

	Multivariate analyses	
Predictors of SCD-mem	Odds ratio	95% Confidence interval
Age, per year	1.01	0.99–1.02
Gender, women vs. men	0.84	0.69–1.03
Education, low to high	1.11	1.06–1.17
MMSE, per point increase	0.94	0.90–0.98
Number of chronic diseases, 0–8	1.17	1.10–1.25
Depressive symptoms, yes vs. no	1.30	1.03–1.66
Anxiety symptoms, yes vs. no	1.38	1.09–1.73
Mastery, low vs. high	1.23	1.05–1.44
Perceived self-efficacy, low vs. high	1.30	1.11–1.52
Neuroticism, high vs. low	1.48	1.26–1.74

Mental health and personality

SCD | *Proposal for a taxonomy*

Score					
1		2		3	
Psy	SomCom	Psy	SomCom	Psy	SomCom
Subthreshold symptoms of • Anxiety • Depression Personality traits • Neuroticism	<3 cardiovascular risk factors (CVRF), e.g., • Hypertension • Metabolic syndrome • Obesity • Diabetes • Family history of stroke or cardiac infarction	Psychiatric disorders, e.g., • Major depression or >2 depressive episodes medically treated in the last 10 years • Generalized anxiety disorders ADHD Personality disorders	1 untreated CVRF or >3 CVRF Chronic diseases requiring chronic corticoid or immunosuppressor treatment, e.g., • HIV • Polymyalgia rheumatic Neurological comorbidity with intermittent neurological dysfunction, e.g., • Epilepsy • Migraine with aura	Treated severe psychiatric disorders, e.g., • Schizophrenia • Bipolar disorder	Chronic/acute neurologic comorbidity associated with permanent motor or sensitivity loss, e.g., • Lateral amyotrophic sclerosis • Multiple sclerosis • Stroke Physical comorbidity requiring >2 surgical interventions, e.g., • Cures of inguinal hernia Cancer comorbidity currently treated or not in remission Cardiovascular comorbidity requiring surgical/ endovascular intervention >1 untreated CVRF

Ribaldi et al. (2024)
Neurodegener Dis

Sub-type attribution:

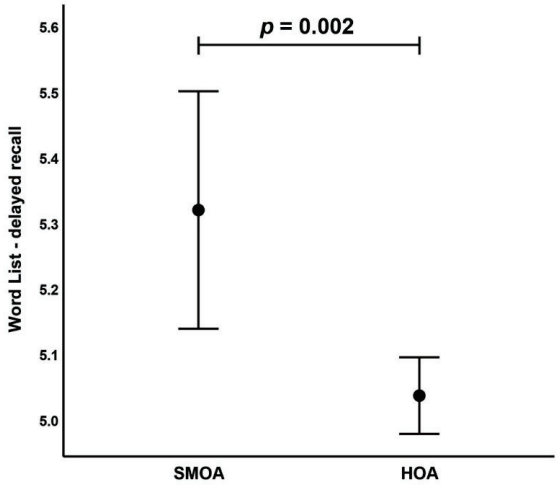
- Based on highest score (**Psy** *vs* **SomCom**)
- Score must be **2 or 3**
- If scores are equivalent or both <2, then NAC

Current knowledge

Objective cognitive decline

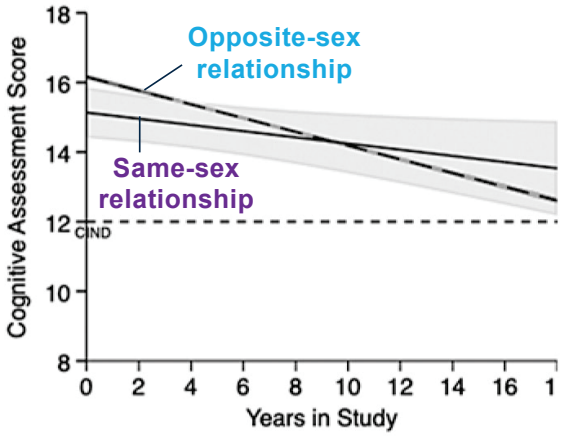
Cognitive performance - SMOAs

SM have **better episodic memory**



Stinchcombe & Hammond (2021) *J Gerontol*
Manca et al. (2022) *Front Human Neurosci*
Manca & Venneri (2023) Innov Aging

SM have **slower cognitive decline**



Hanes & Clouston (2023) *Gerontology*
Correro et al. (2023) *J Alzheimer's Dis*

More preserved cognition?

Only large database studies with many potential biases
(e.g. non-response, healthy volunteer and survival biases)

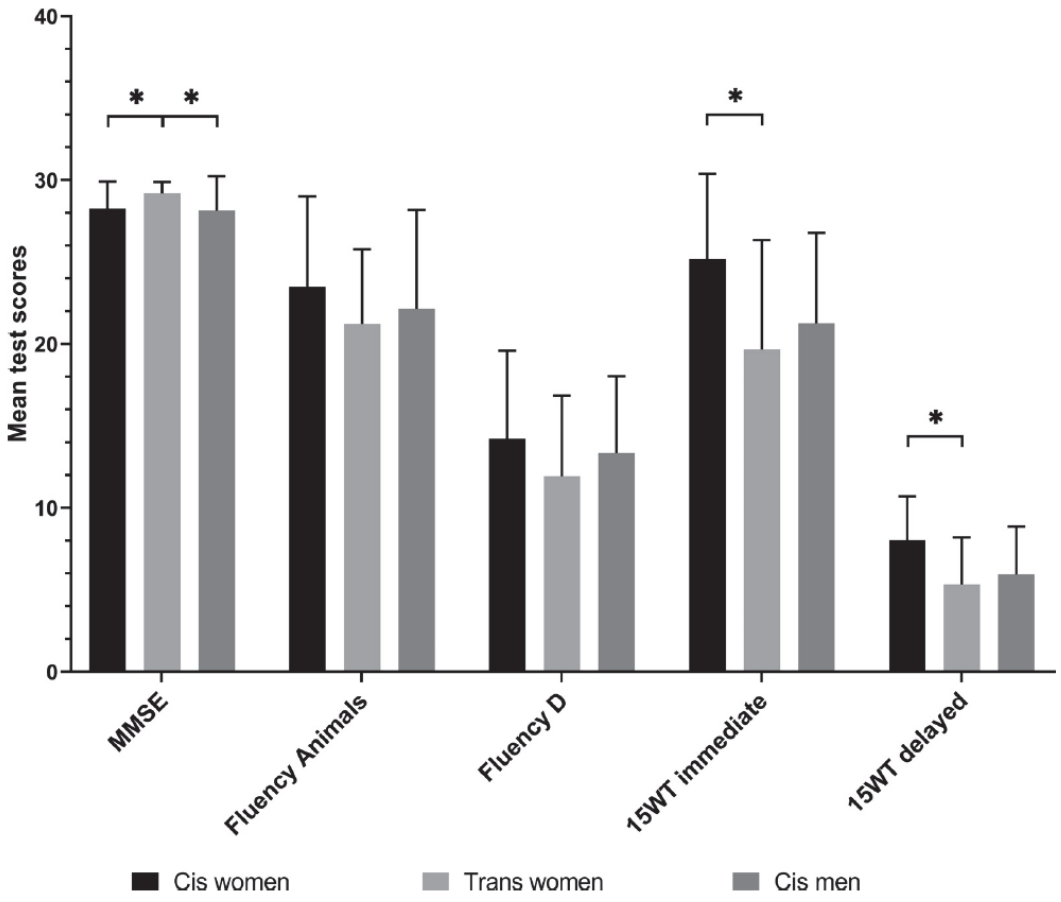
Cognitive performance - SMOAs

Manca et al. (2025) *Brain Sci*

	RCI-epi		RCI-sem	
Variable	**β (95% CI)**	***p***	**β (95% CI)**	***p***
Demographics				
SO (SMOA)	0.20 (−0.76, 1.16)	0.678	−1.23 (−2.57, 0.10)	0.070
Age	**−0.01 (−0.02, −0.01)**	**<0.001**	**−0.02 (−0.03, −0.02)**	**<0.001**
Sex (F)	0.05 (−0.04, 0.015)	0.283	0.03 (−0.10, 0.16)	0.655
Education (ref: no qualifications)				
Level 1	−0.16 (−0.37, 0.04)	0.123	0.14 (−0.15, 0.42)	0.347
Level 2	−0.12 (−0.30, 0.05)	0.168	0.10 (−0.15, 0.34)	0.441
Level 3	−0.13 (−0.33, 0.08)	0.230	0.15 (−0.14, 0.44)	0.306
Level 4	−0.11 (−0.31, 0.10)	0.305	0.19 (−0.09, 0.47)	0.184
Level 5	−0.16 (−0.47, 0.15)	0.306	0.08 (−0.35, 0.51)	0.721
Level 6	−0.17 (−0.37, 0.03)	0.093	0.05 (−0.23, 0.33)	0.744

No differences in episodic/semantic memory decline over 2 years

Cognitive performance - GMOAs



Participants aged 55-69:

- 37 transgender women
- 111 cis women
- 111 cis men

GMOAs vs COAs:

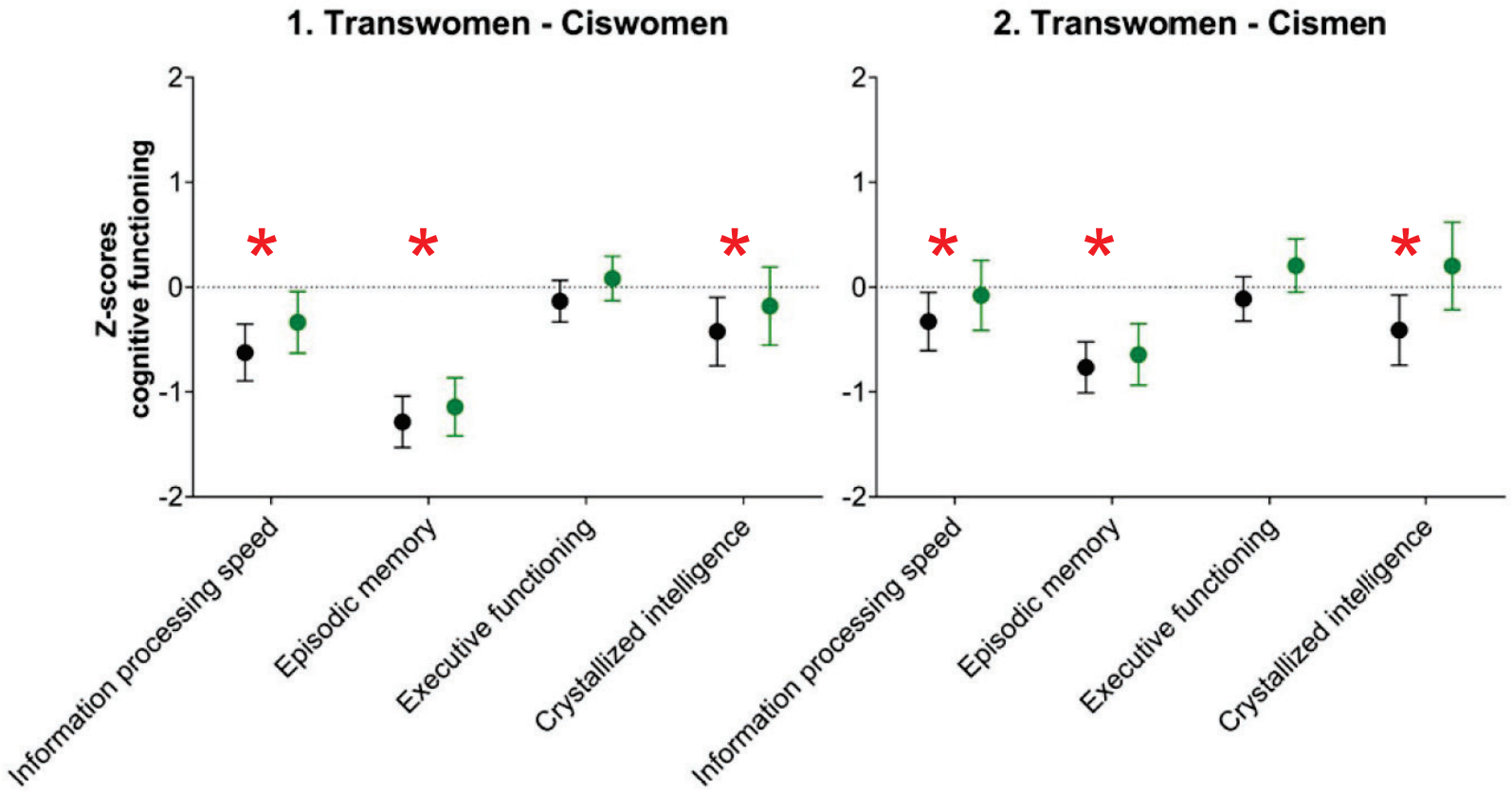
- **Higher MMSE score**
- **Lower episodic memory scores**

van Heesewijk et al. (2021)
J Sex Med

Cognitive performance - GMOAs

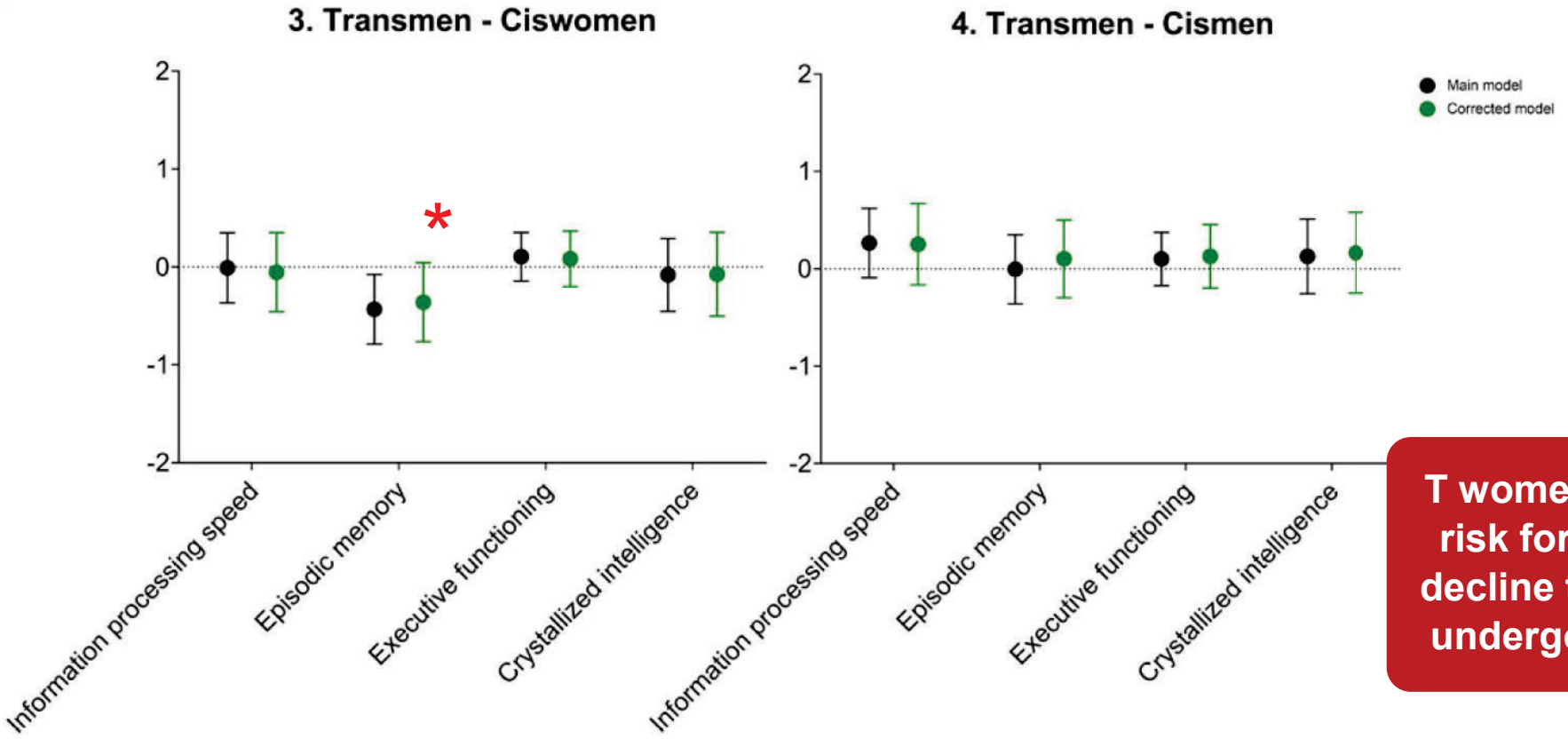
van Heesewijk et al. (2023)
J Sex Med

Transgender women (n = 73)
Aged 57-84



Cognitive performance - GMOAs

Transgender men (n = 39)
Aged 56-79



T women at higher risk for cognitive decline than T men undergoing GHT?

Cognitive performance - Summary

- Few longitudinal studies – **difficult to assess risk of cognitive decline**
- Longitudinal data on gender minorities are **still lacking!**
- Most studies included **only one cognitive measure**
- Inconsistent findings, but **mostly lack of differences** between SGM and heterosexual cisgender groups
- Some cognitive functions **never explored** (e.g., social cognition)
- Clues about **selective risk** in LGBTQIA+ sub-groups to be confirmed

Current knowledge

Dementia risk

Dementia risk

Same-sex *vs* opposite-sex relationships:

NO DIFFERENCES

TABLE 3 Association between risk of MCI or dementia and same-sex vs opposite-sex relationships

	Unadjusted Model			Adjusted Model[a]		
	Hazard Ratio	(95% CI)	*P* Value	Hazard Ratio	(95% CI)	*P* Value
MCI						
Same sex	0.92	(0.72-1.18)	0.51	1.05	(0.83-1.32)	0.70
Opposite sex	1.00	—	—	1.00	—	—
Dementia						
Same sex	1.14	(0.76-1.71)	0.54	1.21	(0.73-2.00)	0.46
Opposite sex	1.00	—	—	1.00	—	—

Perales-Puchault et al. (2019) *Int J Geriatr Psychiatry*

Dementia risk

Inconsistent findings for sexual minorities

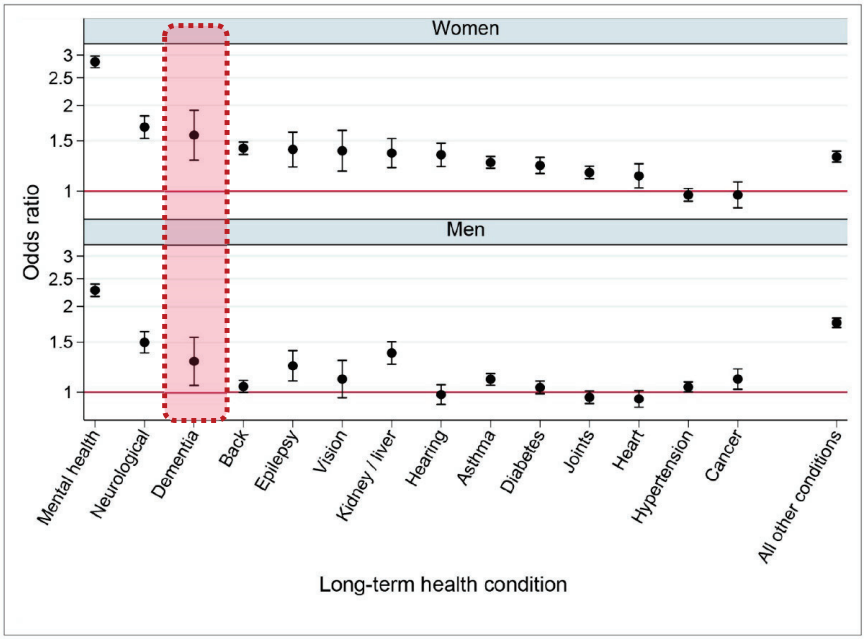
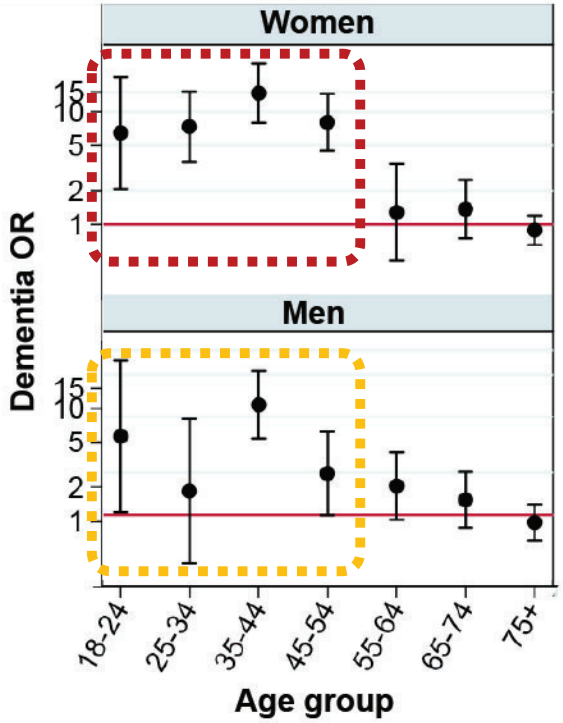


Figure 1 Odds ratios for long-term conditions by sexual orientation (sexual minority and heterosexual) and adjusted for deprivation, ethnic group, region, and age (N = 1 341 339; n = 741 438 women, n = 599 901 men)



No aetiology data:

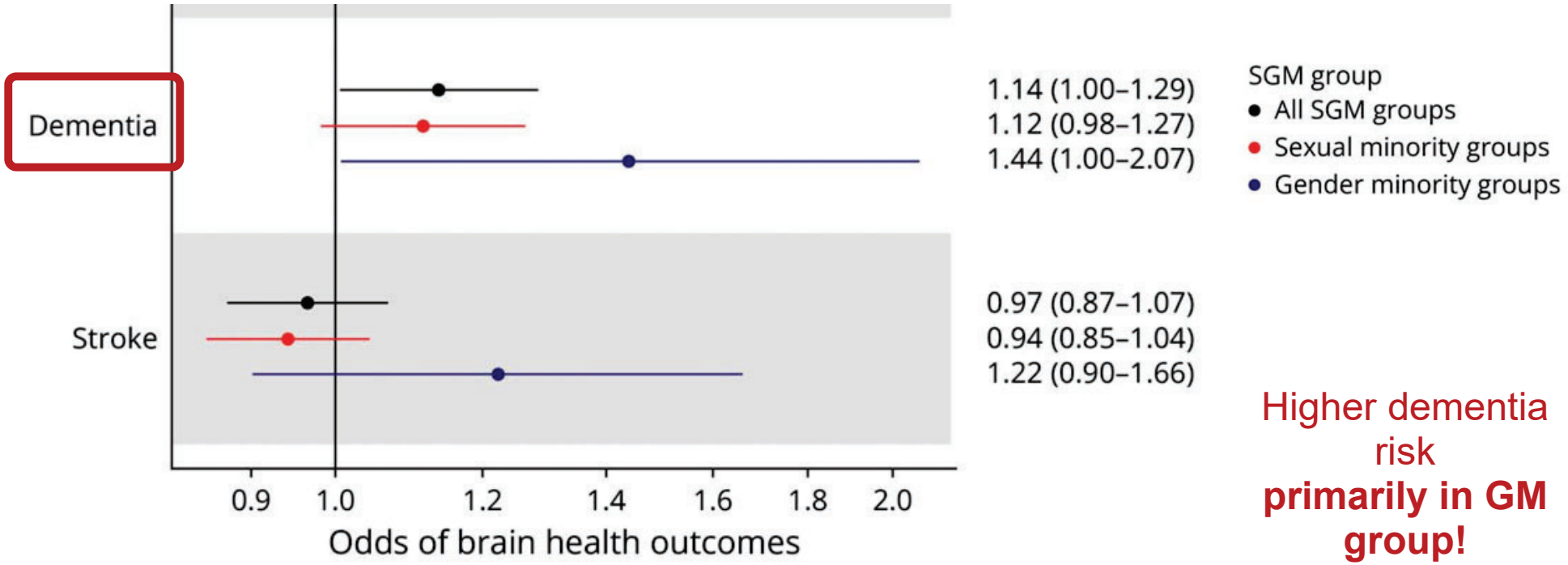
What may drive dementia risk in younger people?

Adapted from Saunders et al. (2022) *BJGP*

Dementia risk

SGM: n = 39,632
Age = 42.6 (16.3)

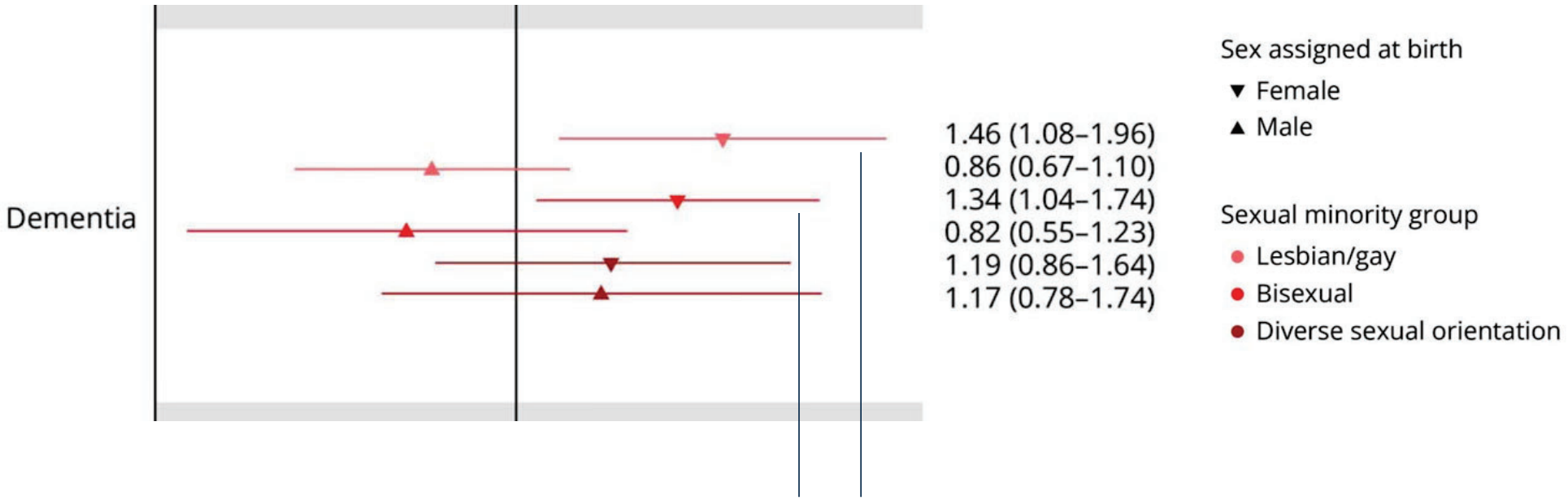
Adapted from
Huo et al. (2024) *Neurol*



Higher dementia risk **primarily in GM group!**

Dementia risk

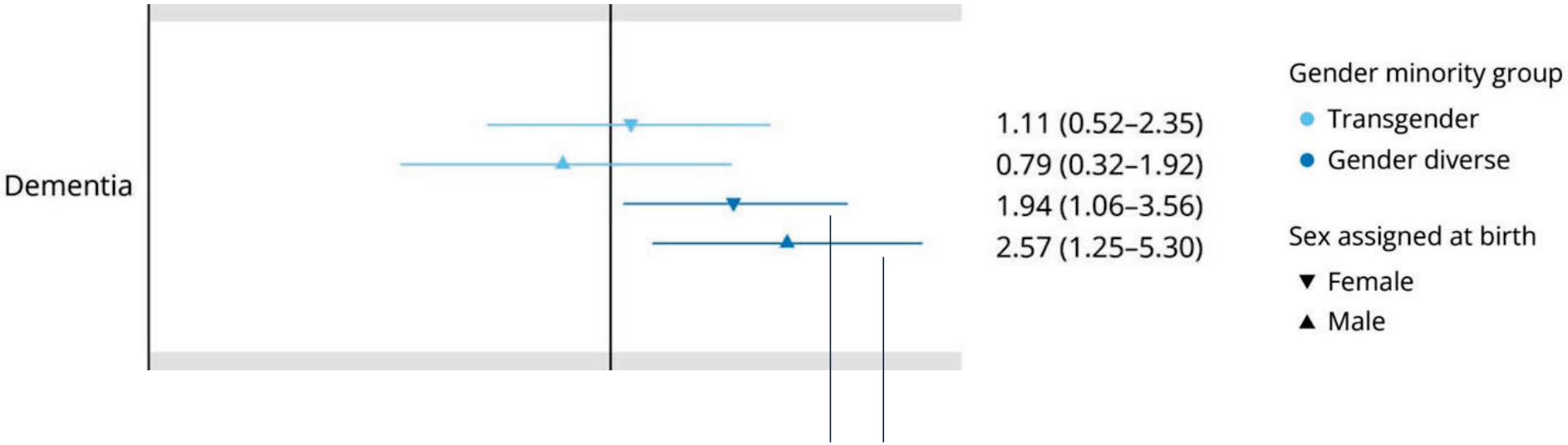
Adapted from
Huo et al. (2024) *Neurol*



Higher dementia risk in
lesbian/bisexual women, but not in men

Dementia risk

Adapted from
Huo et al. (2024) *Neurol*



Higher dementia risk in
gender diverse* people only

*genderqueer, genderfluid, gender variant, two-spirit, questioning, or unsure

Dementia risk

Multiple studies found **higher risk of dementia in transgender people**

	All trans and non-binary respondents (n, weighted %)	All other survey respondents (n, weighted %)	Adjusted for age, deprivation and ethnicity OR (95% CI)	P value
Autism or autism spectrum condition	227 (4.4)	4236 (0.6)	5.8 (5.0 to 6.6)	<0.0001
Alzheimer's disease or other cause of dementia	96 (1.9)	5471 (0.7)	3.1 (2.5 to 3.9)	<0.0001
A learning disability	204 (4.0)	7607 (1.0)	2.8 (2.4 to 3.2)	<0.0001
A mental health condition	891 (17.4)	66 363 (9.1)	2.0 (1.9 to 2.2)	<0.0001

Saunders et al. (2022) *BMJ Open*

	Overall			18–49 y			≥ 50 y		
	Cisgender (n = 35 285), Mean (SD) or %	Transgender (n = 1784), Mean (SD) or %	*P*	Cisgender (n = 26 272), Mean (SD) or %	Transgender (n = 1332), Mean (SD) or %	*P*	Cisgender (n = 9013), Mean (SD) or %	Transgender (n = 452), Mean (SD) or %	*P*
ADRD	0.8	1.7	<.001*	0.3	1.1	<.001*	2.2	3.5	.07

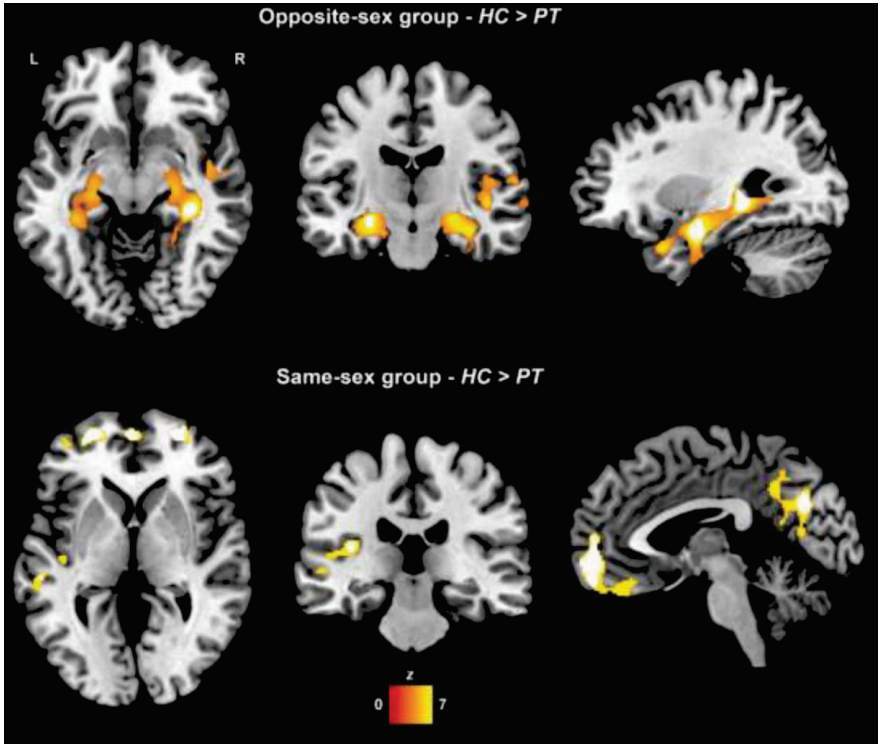
Guo et al. (2022) *AJPH*

Current knowledge

Brain health

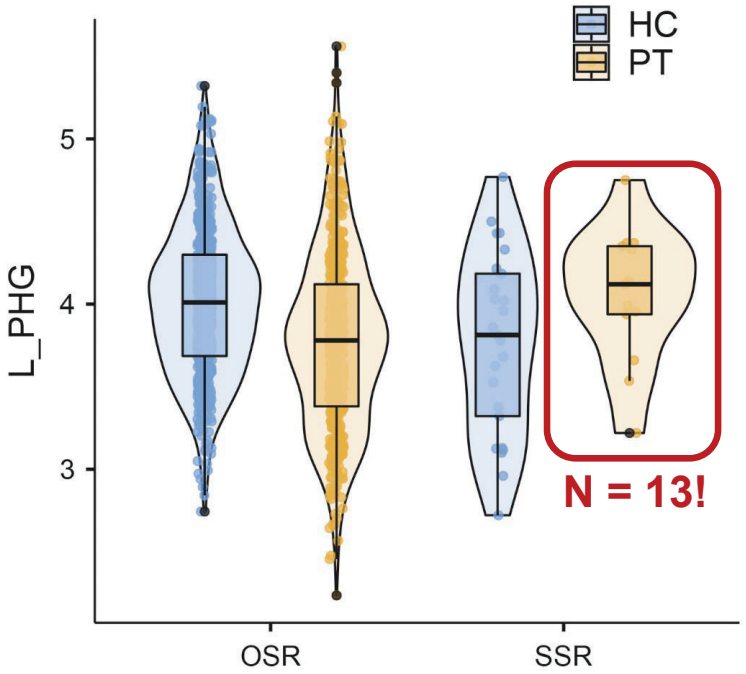
Brain health

Differential grey matter atrophy pattern



Manca & Venneri (2020) *Curr Alzheimer Res*

SM have **more preserve left MTL**



Manca et al. (2022) *Front Human Neurosci*

Brain health

UK Biobank:

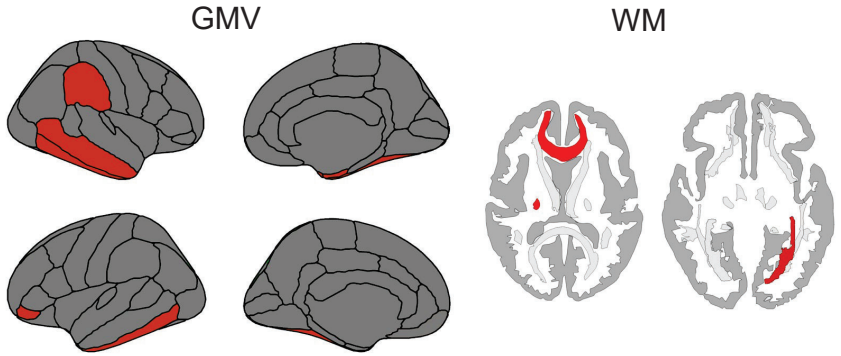
- Aged 50+
- No CI diagnosis

SMOA (*n* = 605)
HOA (*n* = 14179)

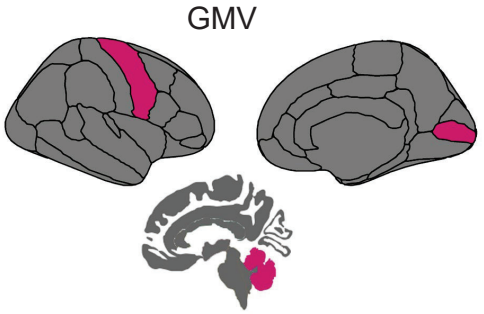
No group differences in grey matter volume and white matter integrity

Associative cortices, affected by AD

In SMOAs:
greater impact of **diabetes, serious illnesses, psychiatric diagnosis, depression**



In HOAs:
greater cerebral impact of **anxiety and childhood trauma**



Primary sensory and motor areas

Recent findings

What do we know about risk factors for cognitive health of SGM older people?

Risk factors for SGM cognitive health

Study	Cohort	SOGI variable	n	Cognitive outcomes
Sexual minorities				
Liu et al. (2021)	HRS	Same-sex relationship	SSR: 196 DSR: 23473	Cognitive impairment diagnosis on TICS
Manca et al. (2022)	NACC	Same-sex relationship	SSR: 36 DSR: 1037	Neuropsychological battery (6 tests)
Hanes & Clouston (2023)	HRS	Same-sex relationship	SSR: 214 DSR: 26130	Three tests from TICS:
Hsieh et al. (2021)	NSHAP	Self-reported SO	SMOA: 81 HOA: 3486	MCI and dementia diagnosis on MoCA-SA
Yang et al. (2024)	CLSA	Self-reported SO	B: 228 LG: 747 HOA: 45018	MAT; AFT
Manca et al. (2025)	ELSA	Self-reported SO	SMOA: 91 HOA: 4180	Episodic and semantic memory reliable change indices
Yang et al. (2026)	CLSA	Self-reported SO	SMOA: 359 HOA: 18780	RAVLT recall score
Manca et al. (2023)	ELSA	Same-sex sexual desires	SMOA: 336 HOA: 5561	Neuropsychological battery (3 tests)
Yoo-Jeong et al. (2025)	MACS	Men who have sex with men	Total: 1067	Neuropsychological battery (3 tests)
Gender minorities				
van Heesewijk et al. (2021)	Clinical sample	People receiving GHT	TOW: 37 F-COA: 111 M-COA: 111	Neuropsychological battery (4 tests)
van Heesewijk et al. (2023)	Clinical sample	People receiving GHT	TOW: 72 F-COA: 218 M-COA: 218 TOM: 39 F-COA: 117 M-COA: 117	Neuropsychological battery (6 tests)

n = 3354

n = 148

Risk factors for SGM cognitive health

SOLID EVIDENCE:

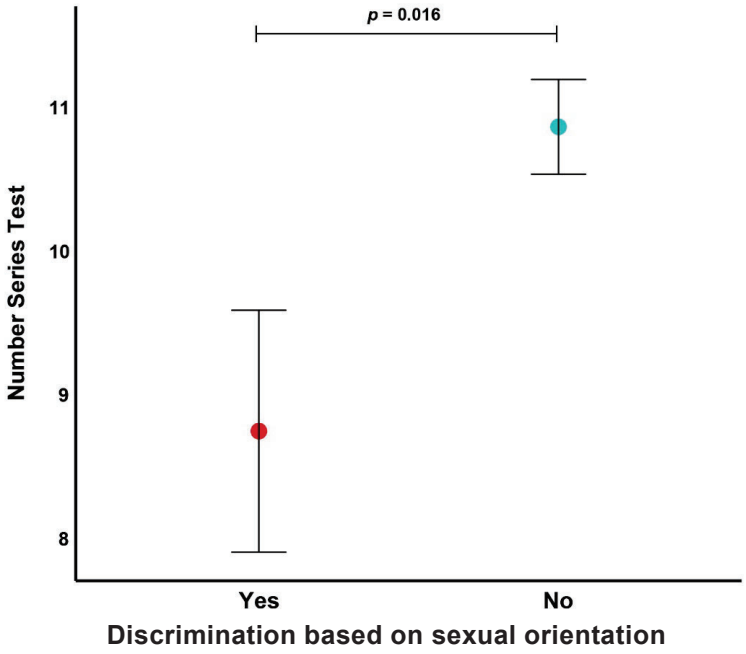
- **Poor mental health (primarily depression)**
- **Being single/unmarried**
- **Cardiovascular risk factors**

TO BE CONFIRMED:

- Social support (lack of)
- Demographics (women, ethno-racial minorities)
- Discrimination based on sexual orientation → The only **SMOA-specific factor** investigated to date

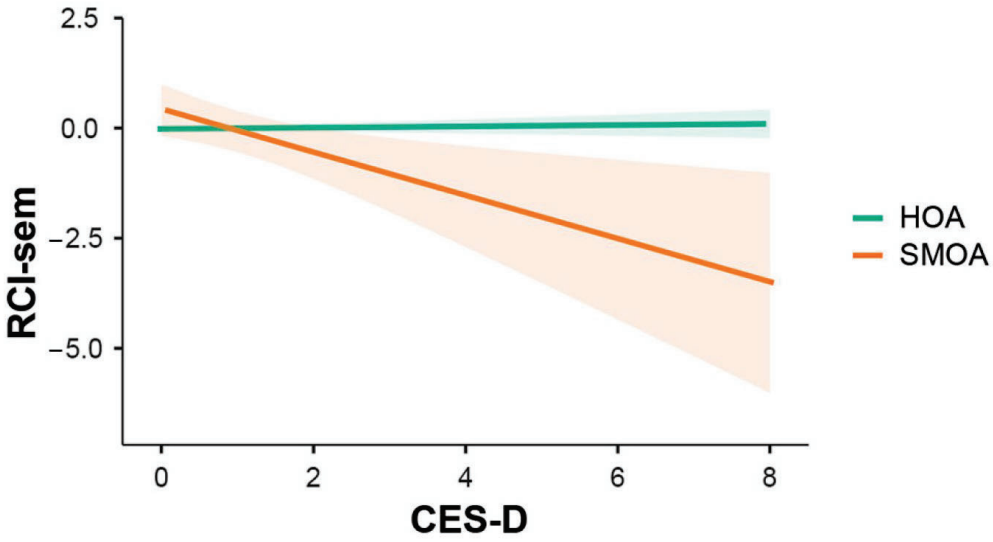
Risk factors for SGM cognitive health

Minority stress has an impact on fluid intelligence of SMOAs



Manca & Venneri (2023) *Innov Aging*

Depression has a greater impact on semantic memory decline in SMOAs but not in HOAs



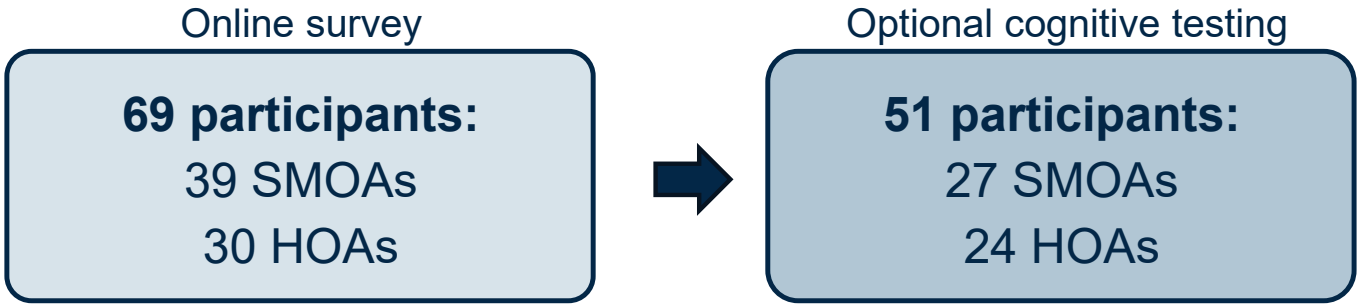
Manca et al. (2025) *Brain Sci*

PSI-CHIASM study (AARF-22-919481)

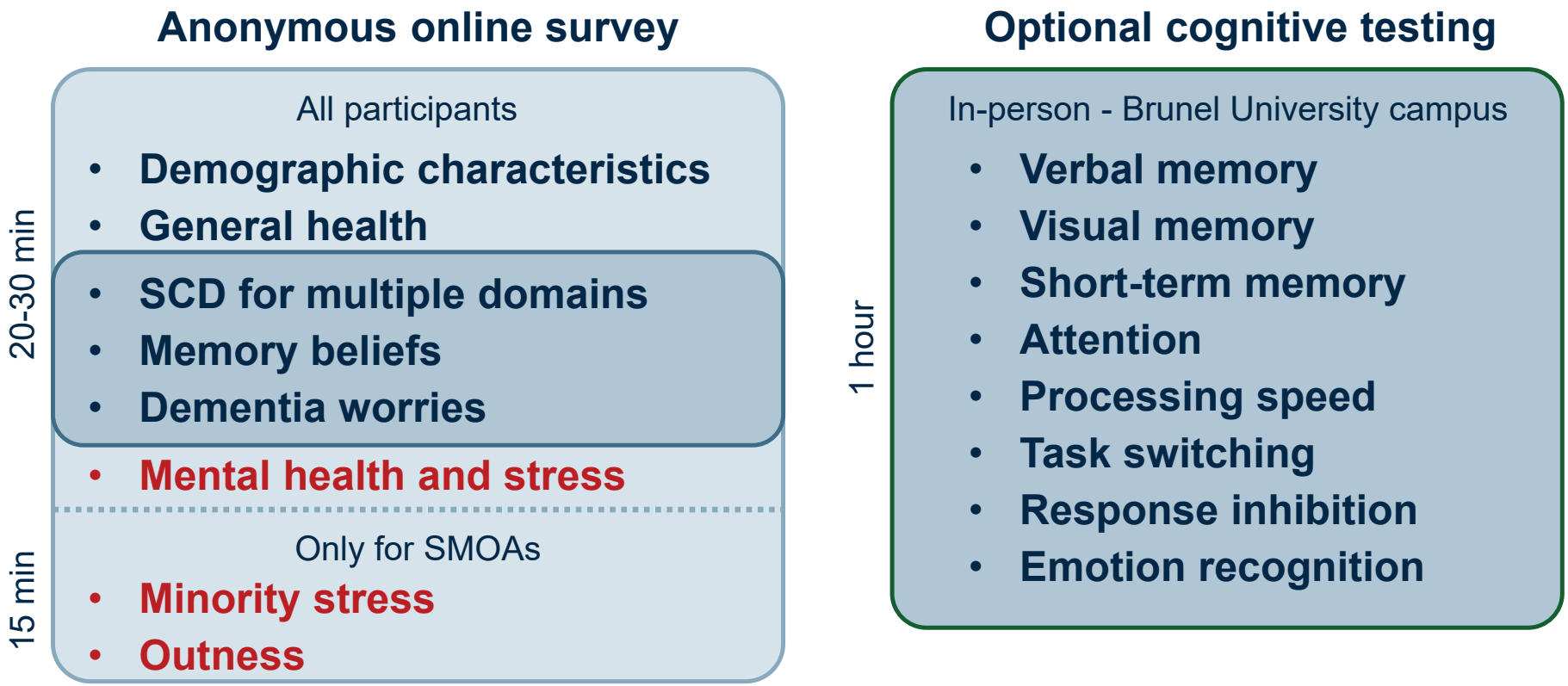
Participants:

- Aged 50 or older
- Cognitively unimpaired
- No chronic neurological/psychiatric conditions

Recruitment: Oct 2023 to Jan 2025



PSI-CHIASM study protocol

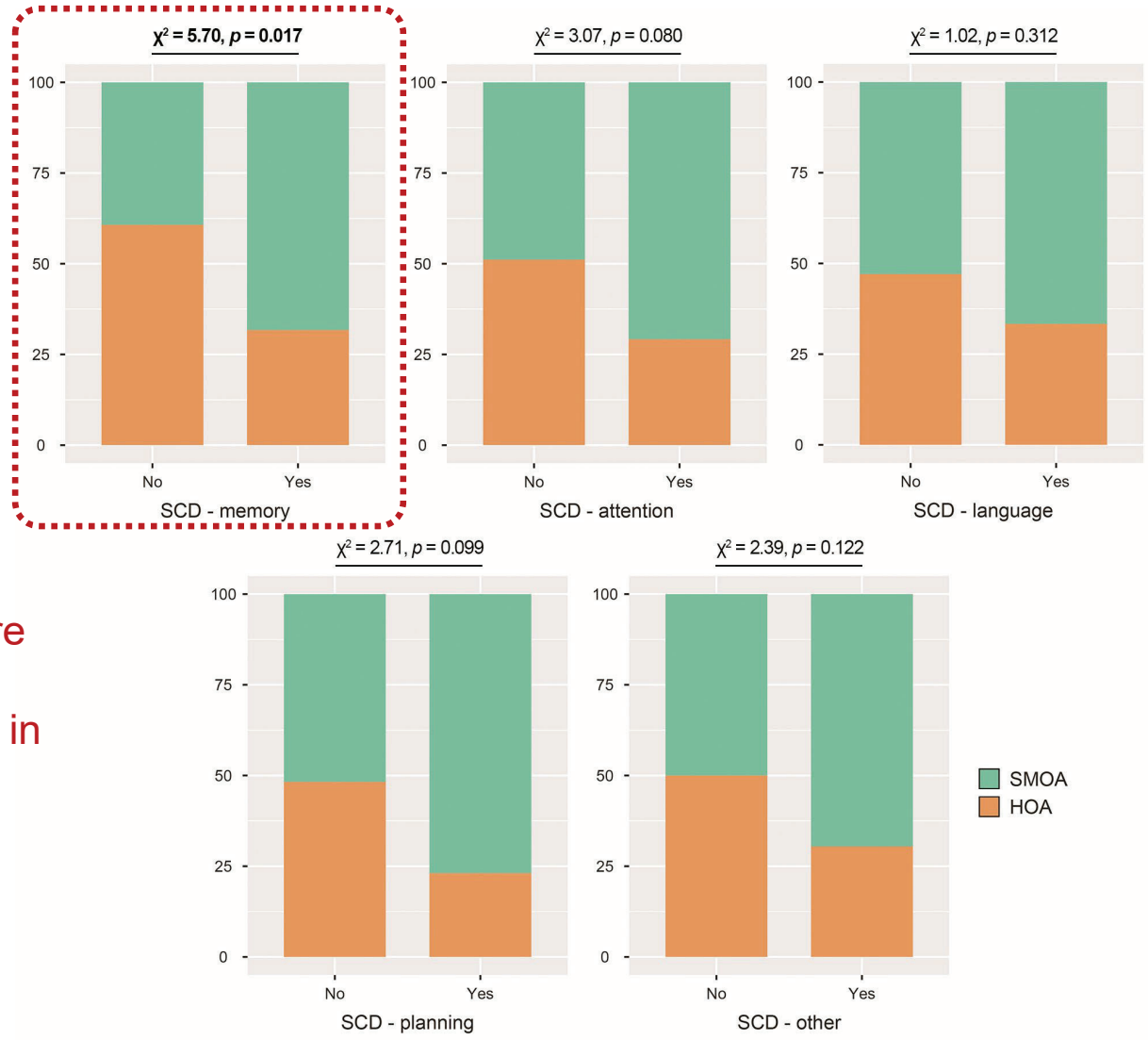


Mental health & General stress

Variable	SMOA (n = 39)	HOA (n = 30)	U	p
Beck Depression Inventory	**12.20 (9.21)**	**5.27 (7.40)**	**257.00**	**<0.001**
Beck Anxiety Inventory	**9.74 (7.67)**	**5.70 (8.65)**	**347.00**	**0.004**
ELSI-severity	12.59 (14.87)	9.13 (6.04)	583.50	0.990
ELSI-number of events	3.56 (3.41)	3.00 (1.91)	576.50	0.922

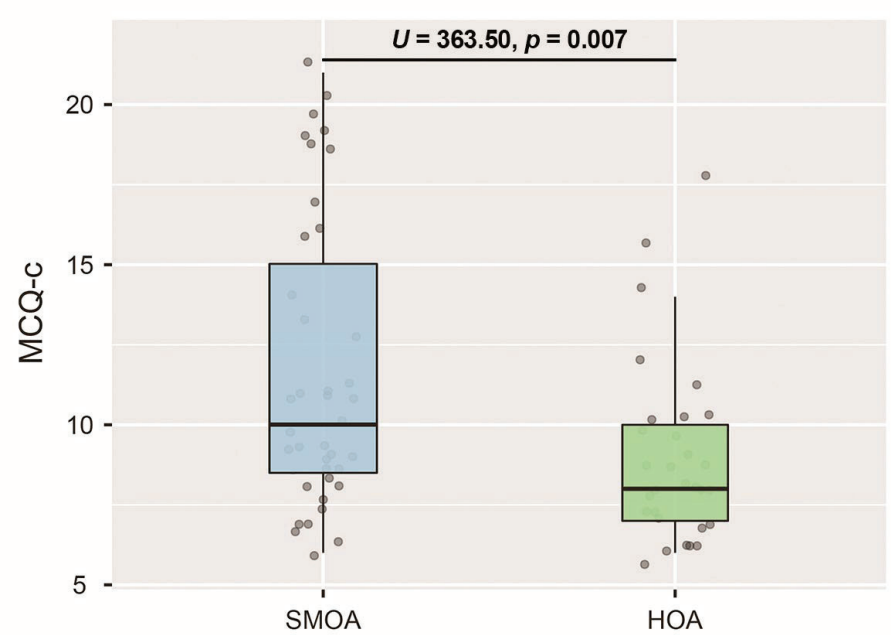
SCD

SMOAs were more likely to report **MEMORY decline** in recent years

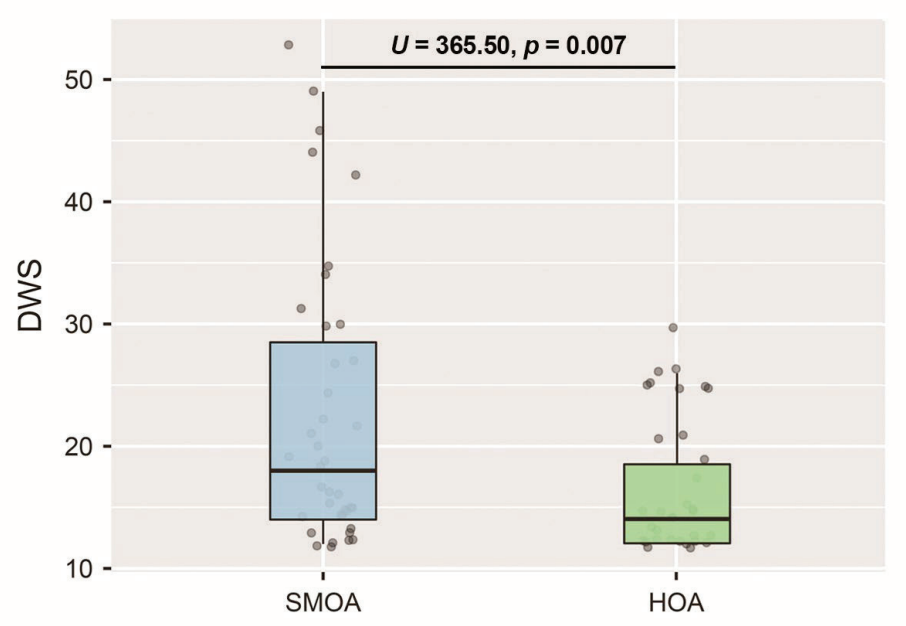


Worries about memory and dementia

Negative beliefs about memory performance

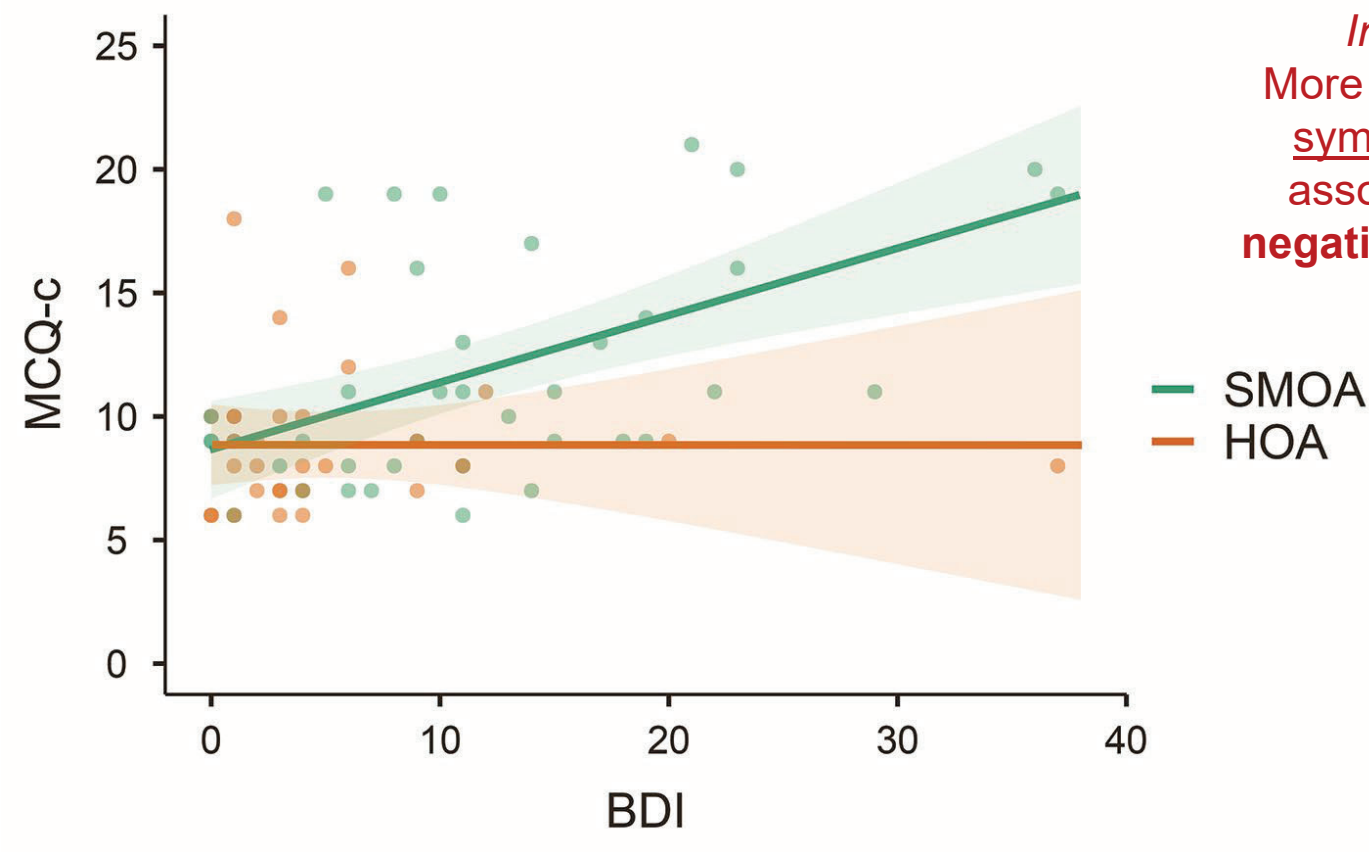


Dementia worry scale



Wells & Cartwright-Hatton (2004) *Behav Res The*
Kinzer & Suhr (2016) *Appl Neuropsychol Adult*

Risk factors - SCD



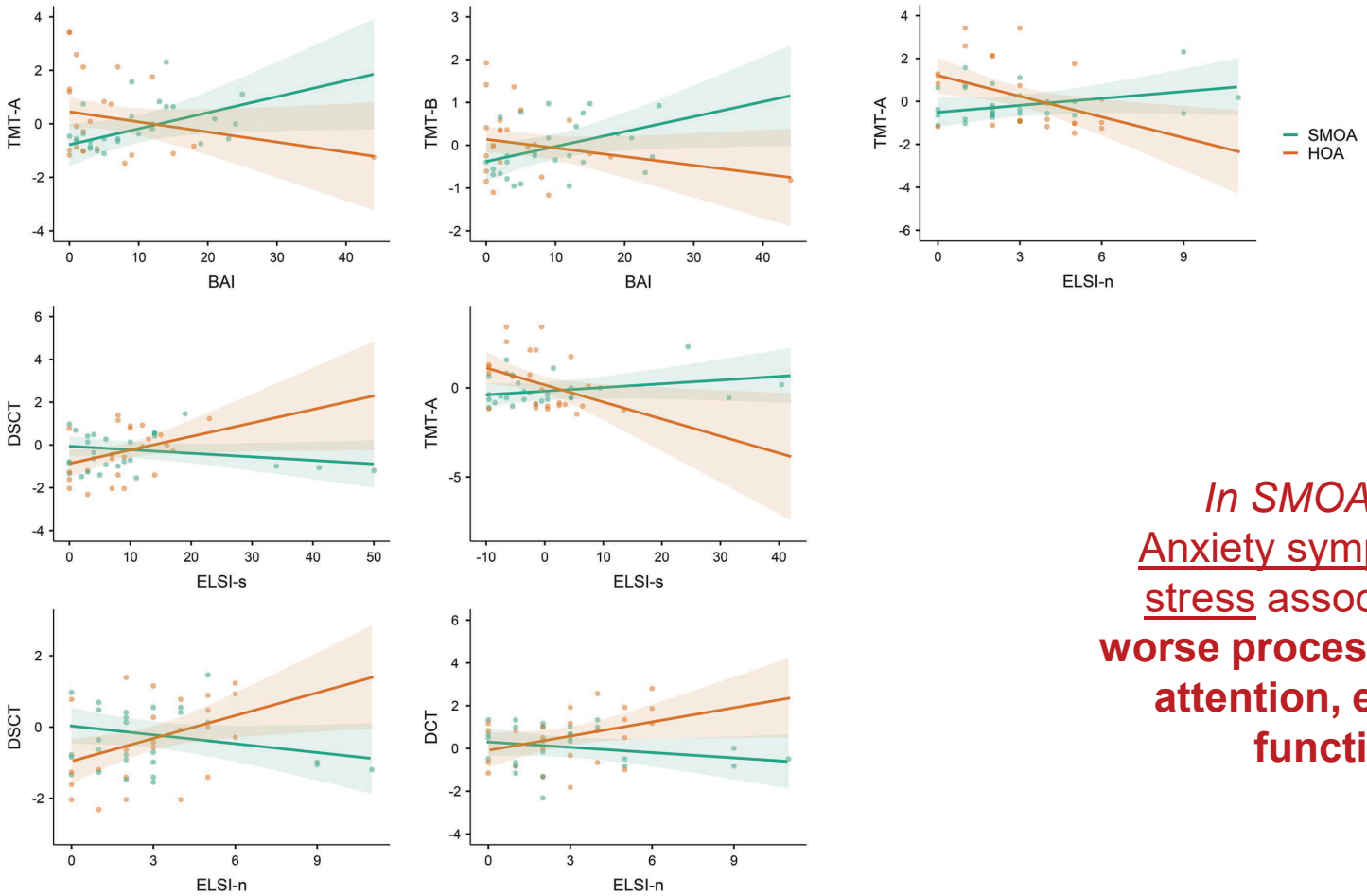
In SMOAs only:
More severe depressive symptoms in SMOAs associated with **more negative memory beliefs**

Cognitive performance

No differences!

Variable	SMOA (n = 27)	HOA (n = 24)	t	p
MMSE	28.63 (1.11)	29.04 (0.96)	-1.46	0.149
LMT – immediate recall	0.21 (1.10)	0.43 (0.75)	-0.85	0.401
LMT – delayed recall	1.09 (0.94)	1.18 (0.65)	-0.40	0.693
DSCT	-0.38 (0.86)	-0.39 (1.19)	0.05	0.986
DCT	0.12 (0.96)	0.53 (1.27)	-1.30	0.200
RCFT – copy	-0.10 (0.72)	-0.41 (1.45)	0.98	0.330
RCFT – delayed recall	0.37 (1.19)	0.28 (1.18)	0.28	0.780
Semantic fluency	0.49 (1.15)	0.98 (1.19)	-1.50	0.141
Phonemic fluency	0.44 (1.18)	0.53 (0.89)	-0.31	0.755
DST – forward	0.28 (0.98)	-0.16 (1.10)	1.50	0.140
DST – backward	-0.01 (0.93)	-0.27 (0.99)	0.96	0.340
TMT-A	-0.07 (0.84)	0.31 (1.58)	-1.08	0.285
TMT-B	-0.10 (0.62)	0.07 (0.80)	-0.87	0.387
Stroop test – time	-0.41 (0.61)	-0.27 (0.61)	-0.79	0.433
Stroop test – errors	-0.12 (0.25)	-0.08 (0.56)	-0.30	0.781
RMET	-0.36 (1.08)	-0.22 (1.05)	-0.49	0.625

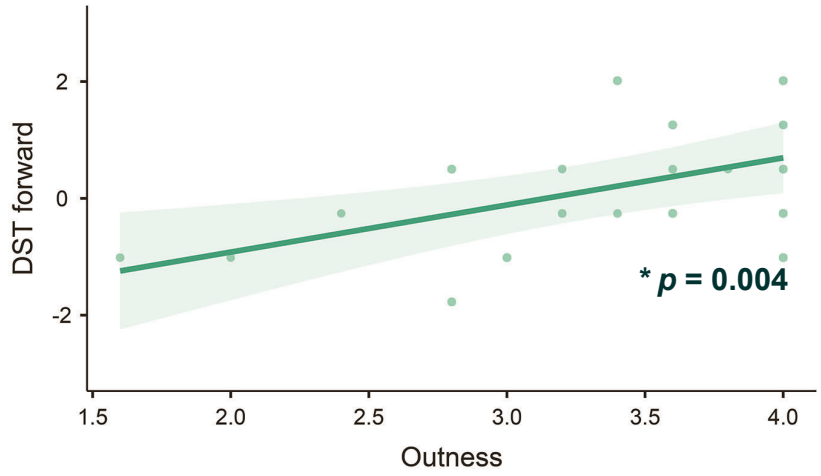
Risk factors – cognitive performance



In SMOAs only:
Anxiety symptoms and stress associated with **worse processing speed, attention, executive functions**

Risk factors – Minority stress and outness

Variable	Minority stress (OR)
SCD-memory	61.40 (0.68, 271166.70); p = 0.272
SCD-attention	0.99 (0.00, 252.49); p = 0.998
SCD-language	**892.07 (1.57, 1539072.08); p = 0.048** *
SCD-planning	15.72 (0.02, 13143.48); p = 0.400
SCD-other	285.46 (0.82, 230565.67); p = 0.070
MCQ-c	**15.23 (3.52, 26.94); p = 0.012** *
DWS	23.36 (-8.52, 55.23); p = 0.146



Negative effects of minority stress on **subjective cognitive health**

Protective effect (?) of outness on **cognitive performance**

To summarise

- Consistent findings of worse **subjective cognitive health**, but not of objectively assessed cognitive performance (e.g. *better memory in SMOAs*)
- **Higher risk of dementia in transgender people**, unclear in sexual minorities
- **Mental health disparities** can explain worse cognitive performance in SMOAs

LIMITATIONS

- Mostly **retrospective** investigations of large databases
- Lack of **clinical research** with wide range of outcome measures
- Lack of data on **risk factors, resilience and aetiology** of dementia cases
- Lack of comparisons between **SGM sub-groups** (e.g., outness in bisexual people)

Clinical practice with SGM older clients

Opportunities for neuropsychologists

Neurology training needs

Exploring the knowledge, attitudes, and practices on sexual and gender minorities patients: a survey on Italian Neurologists

Alessandra Nicoletti[1] · Loretta Giuliano[1] · Giulia Donzuso[1] · Calogero Edoardo Cicero[1] · on behalf of the Gender Neurology Study Group of the Italian Society of Neurology

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- I have received **adequate clinical training and supervision** to work with transgender clients/patients: **3.4%** LGBQ clients/patients: **2.8%**
- *In a European sample*: **8.2%** **21.4%**

Donzuso et al. (2026) *Neurol Sci*

Barriers to care for older SGM people

Older lesbian/gay people less likely to disclose their sexual orientation in healthcare setting due to **internalized homophobia** and **experience of discrimination**

	Lesbian Women				Gay Men			
	Univariable		Multivariable[a]		Univariable		Multivariable[a]	
	OR [95% CI]	*p*	OR [95% CI]	*p*	OR [95% CI]	*p*	OR [95% CI]	*p*
Internalized homophobia	0.36 [0.21, 0.62]	<.001	0.34 [0.18, 0.66]	.001	0.57 [0.45, 0.71]	<.001	0.65 [0.49, 0.86]	.003
Identity affirmation	1.37 [1.04, 1.81]	.03	1.07 [0.75, 1.52]	.70	1.59 [1.30, 1.93]	<.001	1.26 [0.98, 1.61]	.07
Discrimination in past year	0.47 [0.34, 0.66]	<.001	0.46 [0.31, 0.69]	<.001	0.68 [0.57, 0.82]	<.001	0.76 [0.58, 0.98]	.03
Lifetime discrimination	0.70 [0.55, 0.89]	.004	1.01 [0.73, 1.39]	.97	0.70 [0.59, 0.83]	<.001	0.78 [0.61, 0.99]	.04
Community connectedness	1.57 [1.19, 2.07]	.001	1.47 [1.04, 2.08]	.03	1.47 [1.22, 1.77]	<.001	1.39 [1.11, 1.74]	.004

Adapted from Lyons et al. (2021) *J Appl Gerontol*

- **Issues with trusting** medical/research professionals
- Older SGM people today are likely to have lived through years when they were still criminalized and/or considered a mentally ill

Affirmative practice - resources

Table 2. Online resources for learning about gender and working with TGD individuals.

10 Tips for Clinicians Working with TGD People	FactSheet_10Tips.pdf (squarespace.com) https://static1.squarespace.com/static/5d8c2136980d9708b9ba5cd3/t/5e7bf42b7882f95360ea39fb/1585181759763/FactSheet_10Tips.pdf
10 Trans Questions to Ask a Doctor	FactSheet_10Questions.pdf (squarespace.com) https://static1.squarespace.com/static/5d8c2136980d9708b9ba5cd3/t/5e7bf40b22dd926c3244090f/1585181729393/FactSheet_10Questions.pdf
APA Practice Guidelines - TGD	transgender.pdf (apa.org) https://www.apa.org/practice/guidelines/transgender.pdf
Gender Basics and Education	Gender Basics & Education (phsa.ca) http://www.phsa.ca/transcarebc/gender-basics-education
Gender Inclusive Language	Gender_Inclusive_Language_Clinical.pdf (phsa.ca) http://www.phsa.ca/transcarebc/Documents/HealthProf/Gender_Inclusive_Language_Clinical.pdf
Neuropsychological practice with TGD adults	Psychological and Neuropsychological Assessment with Transgender and Gender Nonbinary Adults (apa.org) https://www.apa.org/pi/lgbt/resources/transgender-gender-ninbinary
Policy and practice recommendations – TGD older adults	SageTOA_PolicyBrief_r2 (transequality.org) https://transequality.org/sites/default/files/docs/resouces/TransAgingPolicyReportFull.pdf

Anderson et al. (2025) *TCN*

Holistic evaluation

Comprehensive evaluation:

- Personal history
- Mental health
- Trauma
- Stressors
- **Resources**

Make clinical decisions based on the person in front of you!

Table 2. Interview and Intervention Recommendations.

Interview Questions

Standard evaluations with transgender patients should include:

1. Comprehensive clinical interview and chart review (if possible)
   a. To determine the timeline the patient transitioned: assess adherence and types of cross-sex hormones used, and any surgical interventions completed
2. Gathering medical history will be important, as is the case in cis-gender evaluations, due to the high prevalence of cardiovascular disease and infectious diseases (e.g., HIV) in the transgender population (Trittschuh et al., 2018)

Assessing patients' current and past psychological well-being and treatment history is vital

   a. Trauma and emotional distress is prevalent in this population and may cause decline in specific cognitive domains (i.e., processing speed, attention)

Furthermore, assessing patients' current and previous social support network will be essential to aid in providing collateral information, specifically for those with cognitive impairments

The American Psychological Association (APA) created guidelines to assist psychologists in maintaining culturally competence, developmentally appropriate, and trans-affirmative clinical work

   a. Specifically, Guideline 10 highlights that psychologists "should not assume that any educational problems, occupational problems, cognitive problems, or psychological concerns are (or are not) related to gender identity or minority stress. We recommend the clinician approach these as assessment questions and seek data to inform the interpretation" (APA, 2015, p.846)

Conferring with an expert should be sought out if the following arise during the clinical interview:

1. Complex neuropsychiatric complaints
2. Complex psychological issues (e.g., significant trauma)
3. Complex medical history, in addition to or related to gender confirmation surgery or hormone therapy

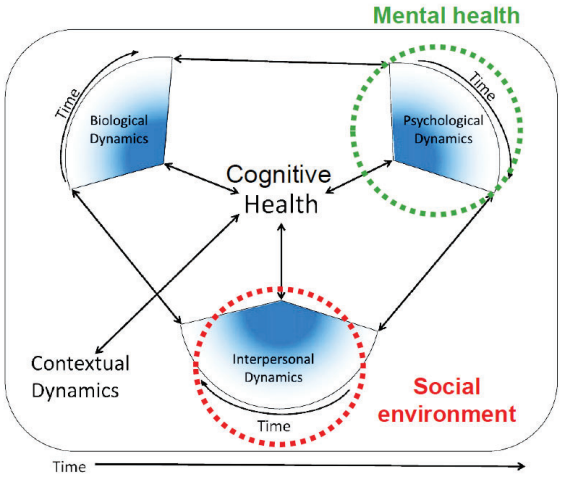
Specific Gender Nonconforming Intervention Recommendations

1. Mental health
   a. Transgender or LGBT specific and/or inclusive support groups appropriate for age group/developmental stage of patient
2. Outpatient psychiatric treatment with competence in gender nonconforming issues
3. Outpatient individual psychotherapy with competence in gender nonconforming issues
4. Information on intimate partner and domestic violence hotlines
   - https://www.thehotline.org/help/

Scharaga et al. (2020) *TCN*

Complexity

1. **Mental health –** both <u>past history</u> and <u>new recent symptoms</u>
   - SCD-psy — Ribaldi et al. (2024) *Neurodegener Dis*
   - FCD — Kemp et al. (2022) *Arch Clin Neuropsychol*
   - MBI — Taragano et al. (2018) *JAD*



Adapted from:
Lehman et al. (2017) *SPPC*

2. **Biomarkers and brain imaging** – differential diagnosis (lack of data)
   - Multidisciplinary assessment

3. **Relevance of SOGI characteristics** – LGBTQ+ sub-group and <u>individual</u>
   - What do they mean for your client?
   - What weight do they play?
   - Tailored vs protocol-based approach
   - Differences across LGBTQ+ subgroups

Feinstein et al. (2019) *Arch Sex Behav*

Psychological interventions

Psychotherapy-induced improvements

in depressive and anxiety symptoms are

associated with reduced risk of dementia!

John et al. (2023) *Psychol Med*
Stott et al. (2023) *Lancet Healthy Longev*

vs

Mixed evidence of effects of

antidepressants on dementia risk

If identified, address **minority stressors**

(affirmative psychotherapy,
psychoeducational interventions etc.)

➡

Wide impact on **biological outcomes**

(overall physical health, immune response, HIV-specific, cardiovascular, metabolic, cancer-related, and hormonal)

Flentje et al. (2020) *J Behav Med*

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LGBT+ Catholics Westminster
Pink Singers
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NINFA-AD

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Thank you for your attention

riccardo.manca@unipr.it

@neurorik.bsky.social

References

- Anderson, E., Eleazer, J. R., Kristensen, Z., St. Amand, C. M., Baker, A. M., Correro II, A. N., ... & Trittschuh, E. H. (2025). Affirmative neuropsychological practice with transgender and gender diverse individuals and communities. The Clinical Neuropsychologist, 39(3), 524-542.
- Brown, M. J., & Patterson, R. (2020). Subjective cognitive decline among sexual and gender minorities: Results from a US population-based sample. Journal of Alzheimer's Disease, 73(2), 477-487.
- Cicero, E. C., Lett, E., Flatt, J. D., Benson, G. P., & Epps, F. (2023). Transgender adults from minoritized ethnoracial groups in the US report greater subjective cognitive decline. The Journals of Gerontology: Series B, 78(6), 1051-1059.
- Comijs, H. C., Deeg, D. J. H., Dik, M. G., Twisk, J. W. R., & Jonker, C. (2002). Memory complaints; the association with psycho-affective and health problems and the role of personality characteristics: a 6-year follow-up study. Journal of affective disorders, 72(2), 157-165.
- Correro II, A. N., Gauthreaux, K., Perales-Puchalt, J., Chen, Y. C., Chan, K. C., Kukull, W. A., & Flatt, J. D. (2023). Cognitive aging with dementia, mild cognitive impairment, or no impairment: A comparison of same-and mixed-sex couples. Journal of Alzheimer's Disease, 92(1), 109-128.
- Donzuso, G., Cicero, C. E., Ferretti, M. T., Arabia, G., de Visser, M., Ramankulov, D., ... & EAN Coordinating Panel on Diversity Equity and Inclusion. (2026). Exploring the knowledge, attitudes and practices on sexual and gender minorities patients among European Academy of Neurology members. Neurological Sciences, 47(2), 182.
- Feinstein, B. A., Dyar, C., Li, D. H., Whitton, S. W., Newcomb, M. E., & Mustanski, B. (2019). The longitudinal associations between outness and health outcomes among gay/lesbian versus bisexual emerging adults. Archives of sexual behavior, 48(4), 1111-1126.
- Flentje, A., Heck, N. C., Brennan, J. M., & Meyer, I. H. (2020). The relationship between minority stress and biological outcomes: A systematic review. Journal of behavioral medicine, 43(5), 673-694.
- Guo, Y., Li, Q., Yang, X., Jaffee, M. S., Wu, Y., Wang, F., & Bian, J. (2022). Prevalence of Alzheimer's and related dementia diseases and risk factors among transgender adults, Florida, 2012–2020. American Journal of Public Health, 112(5), 754-757.

- Hanes, D. W., & Clouston, S. A. (2023). Cognitive aging in same-and different-sex relationships: Comparing age of diagnosis and rate of cognitive decline in the Health and Retirement Study. Gerontology, 69(3), 356-369.
- Hsieh, N., Liu, H., & Lai, W. H. (2021). Elevated risk of cognitive impairment among older sexual minorities: do health conditions, health behaviors, and social connections matter?. The Gerontologist, 61(3), 352-362.
- Huo, S., Rivier, C. A., Clocchiatti-Tuozzo, S., Renedo, D., Sunmonu, N. A., de Havenon, A., ... & Falcone, G. J. (2024). Brain health outcomes in sexual and gender minority groups: results from the all of us research program. Neurology, 103(8), e209863.
- Jacob, L., López-Sánchez, G. F., Haro, J. M., Koyanagi, A., Kostev, K., Grabovac, I., ... & Smith, L. (2021). Association between sexual orientation and subjective cognitive complaints in the general population in England. Journal of Psychiatric Research, 136, 1-6.
- Jessen, F., Amariglio, R. E., Buckley, R. F., van der Flier, W. M., Han, Y., Molinuevo, J. L., ... & Wagner, M. (2020). The characterisation of subjective cognitive decline. The Lancet Neurology, 19(3), 271-278.
- John, A., Saunders, R., Desai, R., Bell, G., Fearn, C., Buckman, J. E., ... & Stott, J. (2023). Associations between psychological therapy outcomes for depression and incidence of dementia. Psychological medicine, 53(11), 4869-4879.
- Kemp, S., Kapur, N., Graham, C. D., & Reuber, M. (2022). Functional cognitive disorder: differential diagnosis of common clinical presentations. Archives of Clinical Neuropsychology, 37(6), 1158-1176.
- Lehman, B. J., David, D. M., & Gruber, J. A. (2017). Rethinking the biopsychosocial model of health: Understanding health as a dynamic system. Social and personality psychology compass, 11(8), e12328.
- Liu, H., Hsieh, N., Zhang, Z., Zhang, Y., & Langa, K. M. (2021). Same-sex couples and cognitive impairment: Evidence from the health and retirement study. The Journals of Gerontology: Series B, 76(7), 1388-1399.
- Lyons, A., Alba, B., Waling, A., Minichiello, V., Hughes, M., Barrett, C., ... & Pepping, C. A. (2021). Comfort among older lesbian and gay people in disclosing their sexual orientation to health and aged care services. Journal of Applied Gerontology, 40(2), 132-141.
- Manca, R., & Venneri, A. (2020). A comparison of neurocognitive decline in older adults in same-sex and opposite-sex relationships. Current Alzheimer Research, 17(12), 1102-1114.

- Manca, R., Correro, A. N., Gauthreaux, K., & Flatt, J. D. (2022). Divergent patterns of cognitive deficits and structural brain alterations between older adults in mixed-sex and same-sex relationships. Frontiers in human neuroscience, 16, 909868.
- Manca, R., & Venneri, A. (2023). Minority stress and psychosocial influences on cognitive performance in sexual minority older adults. Innovation in Aging, 7(8), igad110.
- Manca, R., Flatt, J. D., & Venneri, A. (2025). Differential Impact of Risk Factors for Cognitive Decline in Heterosexual and Sexual Minority Older Adults in England. Brain Sciences, 15(1), 90.
- Nicoletti, A., Giuliano, L., Donzuso, G., Cicero, C. E., & Gender Neurology Study Group of the Italian Society of Neurology. (2024). Exploring the knowledge, attitudes, and practices on sexual and gender minorities patients: a survey on Italian Neurologists. Neurological Sciences, 45(4), 1465-1470.
- Perales-Puchalt, J., Gauthreaux, K., Flatt, J., Teylan, M. A., Resendez, J., Kukull, W. A., ... & Vidoni, E. D. (2019). Risk of dementia and mild cognitive impairment among older adults in same-sex relationships. International Journal of Geriatric Psychiatry, 34(6), 828-835.
- Ribaldi, F., Palomo, R., Altomare, D., Scheffler, M., Assal, F., Ashton, N. J., ... & Frisoni, G. B. (2024). The taxonomy of subjective cognitive decline: proposal and first clinical evidence from the Geneva memory clinic cohort. Neurodegenerative Diseases, 24(1), 16-25.
- Romanelli, R. J., Rosenblatt, A. S., Marcum, Z. A., & Flatt, J. D. (2024). Cognitive impairment in sexual and gender minority groups: a scoping review of the literature. LGBT health, 11(3), 178-192.
- Rosendale, N., Wong, J. O., Flatt, J. D., & Whitaker, E. (2021). Sexual and gender minority health in neurology: a scoping review. JAMA neurology, 78(6), 747-754.
- Saunders, C. L., MacCarthy, S., Meads, C., Massou, E., Mant, J., Saunders, A. M., & Elliott, M. N. (2021). Long-term conditions among sexual minority adults in England: evidence from a cross-sectional analysis of responses to the English GP Patient Survey. BJGP open, 5(5).
- Saunders, C. L., Berner, A., Lund, J., Mason, A. M., Oakes-Monger, T., Roberts, M., ... & Duschinsky, R. (2023). Demographic characteristics, long-term health conditions and healthcare experiences of 6333 trans and non-binary adults in England: nationally representative evidence from the 2021 GP Patient Survey. BMJ open, 13(2), e068099.
- Scharaga, E. A., Chang, A., & Kulas, J. F. (2021). What happens when we forget our own narrative: Transgender dementia case study. The Clinical Neuropsychologist, 35(8), 1485-1497.

- Seelman, K. L. (2019). Differences in mental, cognitive, and functional health by sexual orientation among older women: Analysis of the 2015 behavioral risk factor surveillance system. The Gerontologist, 59(4), 749-759.
- Stinchcombe, A., & Hammond, N. G. (2022). Correlates of memory and executive function in middle-aged and older adults in the CLSA: a minority stress approach. The Journals of Gerontology: Series B, 77(6), 1105-1117.
- Stott, J., Saunders, R., Desai, R., Bell, G., Fearn, C., Buckman, J. E., ... & John, A. (2023). Associations between psychological intervention for anxiety disorders and risk of dementia: a prospective cohort study using national health-care records data in England. The Lancet Healthy Longevity, 4(1), e12-e22.
- Taragano, F. E., Allegri, R. F., Heisecke, S. L., Martelli, M. I., Feldman, M. L., Sánchez, V., ... & Dillon, C. (2018). Risk of conversion to dementia in a mild behavioral impairment group compared to a psychiatric group and to a mild cognitive impairment group. Journal of Alzheimer's Disease, 62(1), 227-238.
- van Heesewijk, J. O., Dreijerink, K. M., Wiepjes, C. M., Kok, A. A., van Schoor, N. M., Huisman, M., ... & Kreukels, B. P. (2021). Long-term gender-affirming hormone therapy and cognitive functioning in older transgender women compared with cisgender women and men. The journal of sexual medicine, 18(8), 1434-1443.
- van Heesewijk, J. O., Dreijerink, K. M., Wiepjes, C. M., Kok, A. A., Geurtsen, G. J., van Schoor, N. M., ... & Kreukels, B. P. (2025). Cognitive functioning in older transgender individuals receiving long-term gender-affirming hormone therapy. International journal of transgender health, 26(1), 88-104.
- Yang, W., Craig, S. L., Anderson, J. A., Ross, L. E., & Muntaner, C. (2024). Sexual orientation and cognition in aging populations: Results from the Canadian Longitudinal Study on Aging. Acta Psychologica, 242, 104117.
- Yang, W., Craig, S. L., & Muntaner, C. (2026). Social participation and memory of aging sexual minority people: the Canadian Longitudinal Study on Aging. Geriatric Nursing, 69, 103819.
- Yoo-Jeong, M., Weinstein, A. M., Ware, D., Brennan-Ing, M., Shoptaw, S., Teplin, L. A., ... & Plankey, M. W. (2025). Associations of Partnership Types and Quality on Cognitive Performance Among Midlife and Older Sexual Minority Men With or Without HIV. AIDS and Behavior, 29(1), 198-210.