

The health benefits of arts & cultural engagement: zooming from psychobiological mechanisms to population-level effects

Prof Daisy Fancourt

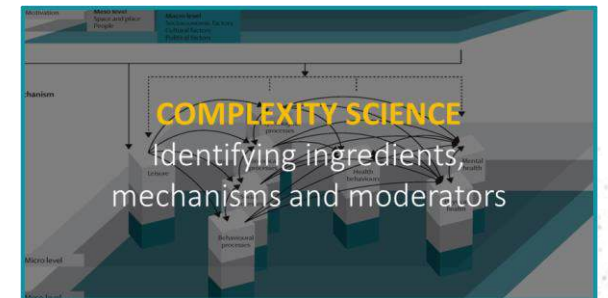
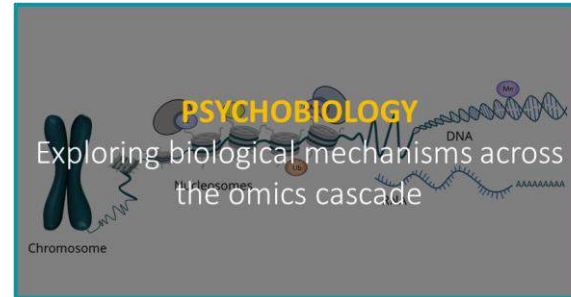
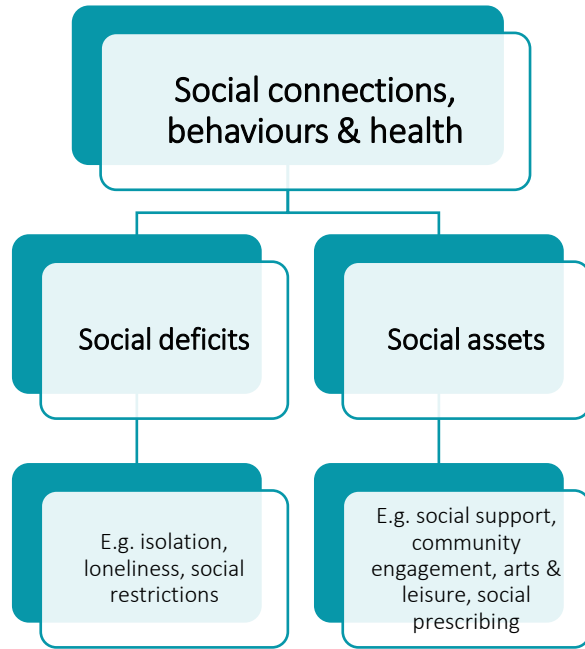
Professor of Psychobiology & Epidemiology

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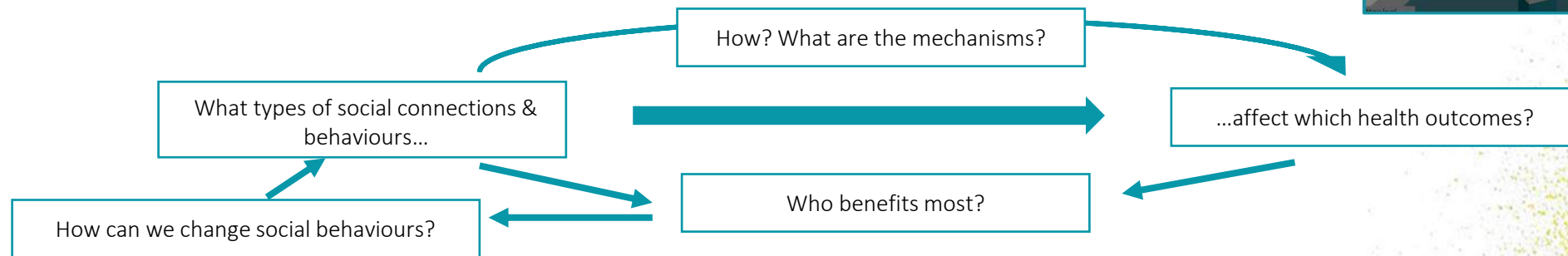
Director, WHO Collaborating Centre on Arts & Health

sbbresearch.org

Our Focus



Our research questions





Performing arts

e.g. music, dance, theatre, film, etc.

Visual arts & craft

e.g. crafts, textiles, painting, photography, sculpture, etc.

Digital and electronic arts

e.g. animations, photography, digital art, electronic art, etc.

Literature

e.g. writing, reading, attending literary festivals etc.

Culture

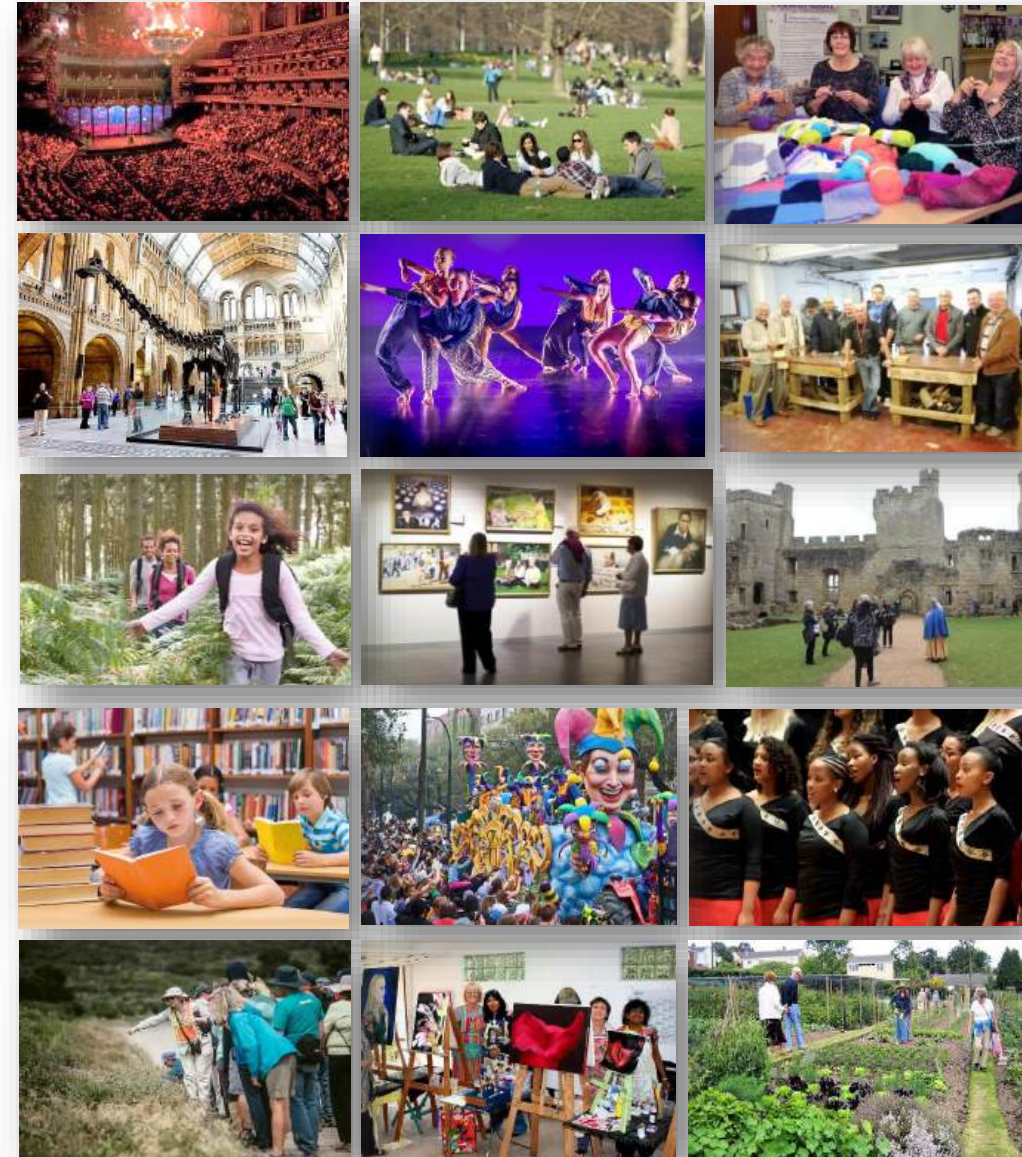
e.g. going to museums, galleries, art exhibitions, concerts, the theatre, community events, cultural festivals, fairs etc.

Heritage

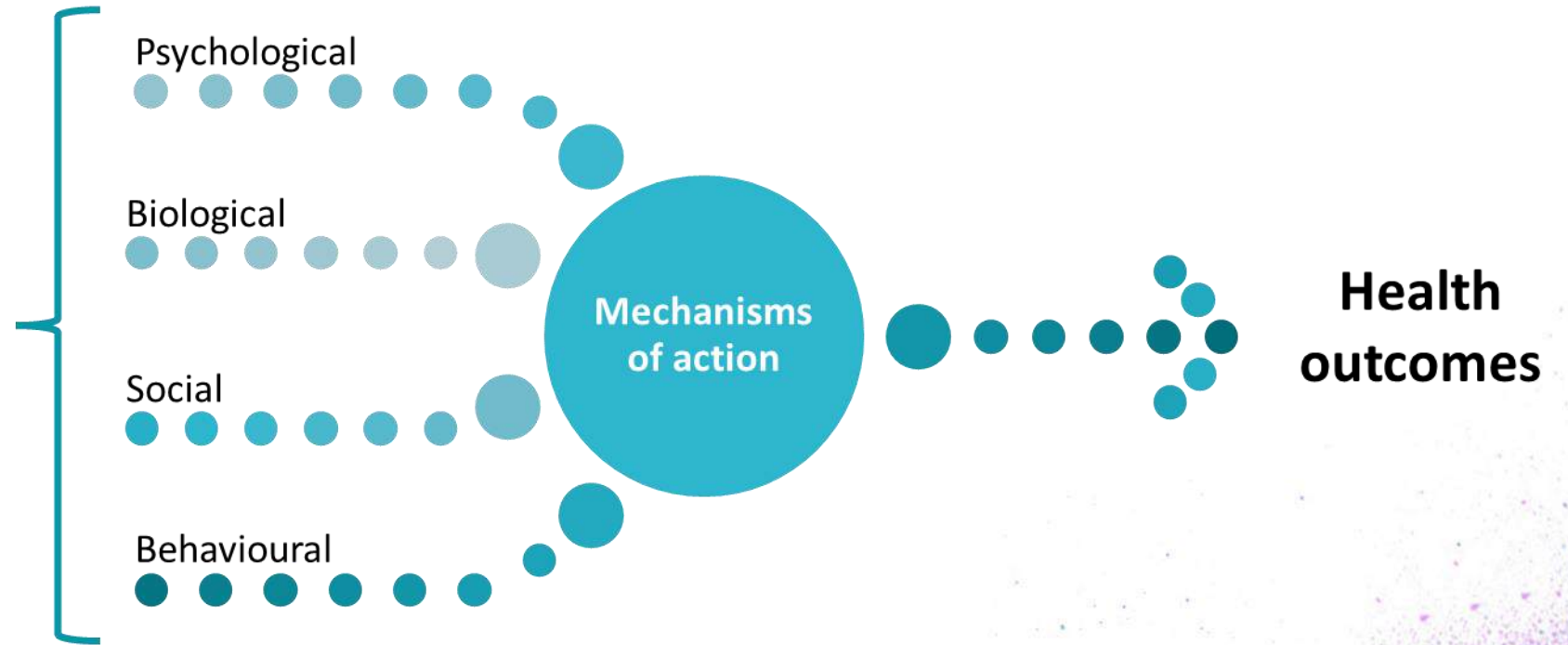
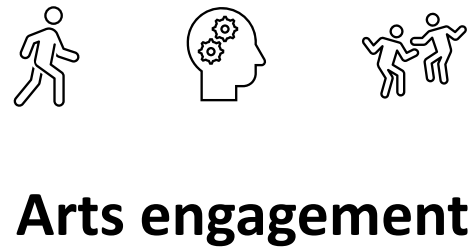
e.g. visiting stately homes, parks, monuments, historical sites etc.

Design & environment

e.g. architecture, interior design, light, sound etc.



How arts affect health



Active Ingredients: INNATE Framework

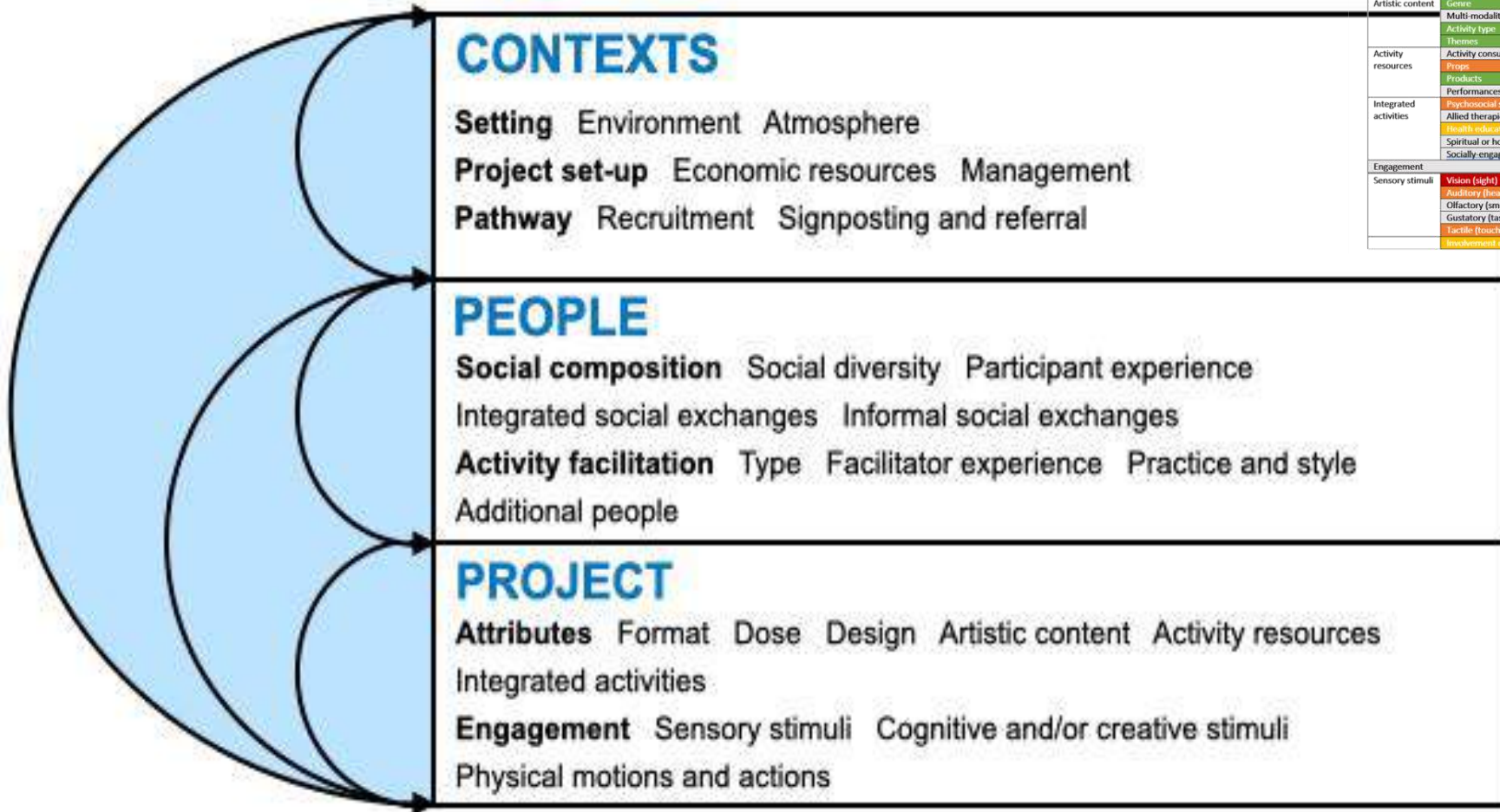


Figure 1: Colour chart comparing ingredients of M4M-online vs M4M-in-person

Key	
Green	Similar active ingredients
Orange	Some differences, some similarities
Red	Different active ingredients
Grey	N/A for activity

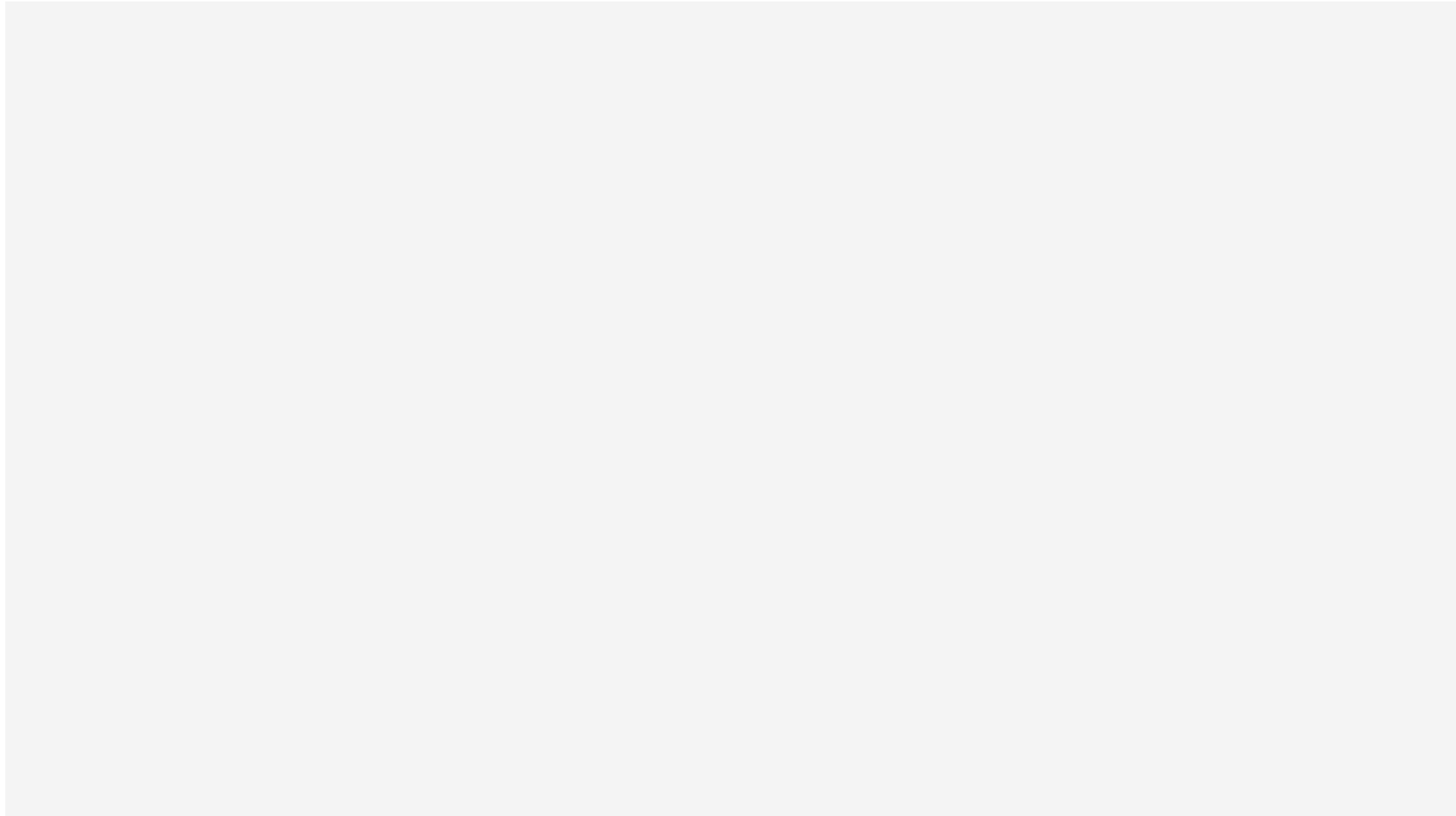
PROJECT	
Attributes	
Format	Mode Synchronicity Activity level
Dose	Frequency Duration Maintenance
Design	Structure Guiding Project approaches Personalisation Challenge Goal orientation Feedback
Artistic content	Genre Multi-modality Activity type Themes
Activity resources	Activity consumables Props Products Performances
Integrated activities	Psychosocial support Allied therapies Health education Spiritual or holistic practice Socially engaged practice
Engagement	
Sensory stimuli	Vision (sight) Auditory (hearing) Olfactory (smell) Gustatory (taste) Tactile (touch) Involvement of the imagination

Cognitive and/or creative stimuli	Emotional stimuli Cognitive stimuli Aesthetic engagement Pleasure Participant choice
Physical motions and actions	Proprioception (kinaesthesia) Movement Physical exercises
PEOPLE	
Social composition	
Social diversity	Presence of others Shared attributes Distinct attributes Personal attributes
Participant experience	Activity experience Health experience Lived experience Relationship to others
Integrated social exchanges	Shared focus Shared activity Social exchanges Structured social time during activity Structured social time outside activity Continuity across
Informal social exchanges	Unstructured social time during activity Unstructured social time outside activity
Activity facilitation	
Type	Facilitator(s) Co-production Number Professionalisation Training Consistency
Facilitator experience	Activity experience Health experience Lived experiences Relationship to others
Practice and style	Technique Personal attributes Values directed focus Outcomes directed focus Person-centred focus

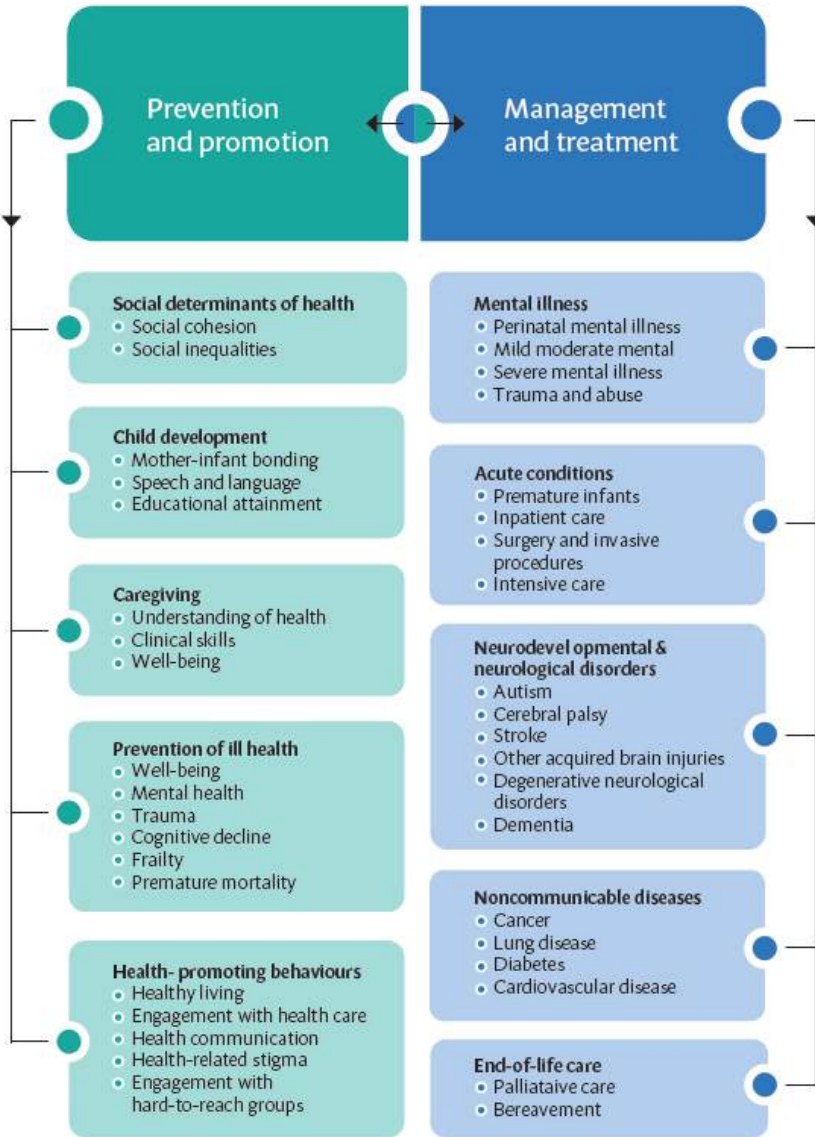
Additional people	Autonomy directed Equality, diversity, and inclusion Safety Tailoring Presence of volunteers Presence of healthcare professionals Presence of others
CONTEXTS	
Setting	
Environment	Location Basic features Attractiveness Situation Time and day Access Privacy
Atmosphere	Comfort Belonging Familiarity Ambiance Organisation
Project set-up	
Economic resources	Participant charges Project funding Fees Longevity Environmental sustainability
Management	People Affiliation Branding Collaboration Patient and Public Involvement
Recruitment	Formal referral Informal referral Choice Advertising
Signposting and referral	Intra-sector signposting Health-sector signposting Social signposting Other-sector signposting Safeguarding referral

Mechanisms of Action

Multi-level Leisure Mechanisms Framework



WHO Report on Arts & Health



World Health Organization
Regional Office for Europe

What is the evidence on the role of the arts in improving health and well-being in the WHO European Region?

Performing arts

Arts interventions, such as acting in a drama to improve chronic obstructive pulmonary disease, are considered non-invasive, low-risk treatment options and are increasingly being used by Member States to complement more traditional biomedical treatments.

The Health Evidence Network (HEN) syntheses report on arts and health, which will be launched on 4 November 2019, marks the global academic literature on this subject in both English and Russian. It references over 500 publications, including 300 reviews covering over 3000 further studies. As such, the report represents the most comprehensive evidence review of arts and health to date.

Visual arts, design and craft

The report finds evidence of the contribution of the arts to the promotion of good health, and the prevention of a range of mental and physical health conditions, across the treatment or management of acute and chronic conditions adding across the life-course. The arts can be cost-effective solutions since they can frequently draw on existing assets or resources, although more research is needed into the health economics of this field.

The report also finds that the arts may help in providing multidisciplinary, holistic and integrated people-centred care, addressing complex challenges for which there are no current health-care solutions. As such, the arts could help countries reach the integrated targets of key global frameworks such as the 2030 Agenda for Sustainable Development and the 17th United Nations Sustainable Development Goals, which aim to increase human capital, reduce inequality and promote multifaceted action for health and well-being.

Prevention and promotion

The arts may:

- affect the social determinants of health, e.g. developing social cohesion and reducing social inequalities and inequities;
- support child development (e.g. enhancing mother-infant bonding and supporting speech and language acquisition);
- encourage health-promoting behaviours (e.g. through promoting healthy living or encouraging engagement with health care);
- help to prevent ill health (including enhancing well-being and reducing the impact of trauma or the risk of cognitive decline); and
- support caregivers (including enhancing our understanding of health and improving clinical skills).

Management and treatment

The arts may:

- help people experiencing mental illness at all stages of the life-course (e.g. by supporting recovery from perinatal mental illness and after trauma and abuse);
- support care for people with acute conditions (e.g. by providing the experience of art outcomes in care for hospital inpatients and individuals in intensive care);
- support people with neurological disorders (including autism, cerebral palsy, stroke, degenerative neurological disorders and dementia);
- assist in the treatment of non-communicable diseases (including cancer, lung disease, diabetes and cardiovascular disease); and
- support end-of-life care (including palliative care and bereavement).

www.who.int/europe/art-and-health

What the HEN report will consider

The evidence synthesized in the report provides suggestions for integrating the culture, social care and health sectors to support health and well-being throughout the life course.

Acknowledging the growing evidence base for the role of the arts in improving health and well-being, the HEN report:

- highlights arts interventions for which there is particularly promising evidence;
- shares knowledge and practice from the WHO European Region and around the world using case studies; and
- identifies areas within the arts and health where further research is still needed.

Recognizing the added health value of engagement with the arts, the HEN report:

- examines the health benefits of existing, informal and accessible provision of art to everyone across the life course;
- establishes the benefits for arts and cultural organizations of meeting health and well-being in an integral and strategic part of their work; and
- promotes public awareness of the potential health benefits of engaging with the arts.

Noting the cross-sectoral nature of the arts and health fields, the HEN report:

- reviews structures and mechanisms for collaboration between the culture, social care and health sectors, including co-funding between sectors;
- examines referral mechanisms from health and social care to community arts programmes such as social prescribing schemes; and
- considers evidence for the benefits of including arts and experiential writing in the training of health care professionals.

Evidence for health and well-being in context

The WHO Regional Office for Europe and its Member States recognize the importance of culture in shaping health and well-being throughout the life course. Operating under the Evidence for Health and Well-being in Context initiative, the Cultural Context of Health and Well-being (CCHW) project has been established as a cross-cutting initiative within the Regional Office and was set to take a more systematic approach to research into how culture affects perceptions, access and experience of health and well-being. By supplementing quantitative data with qualitative evidence from the social sciences and broader health humanities, the CCHW project aims to enhance our understanding of people's needs, values, perceptions and experience of the sector in order to improve the health and well-being of all. The HEN report on arts and health was developed as part of this work. For more information, please visit: www.euro.who.int/cchw

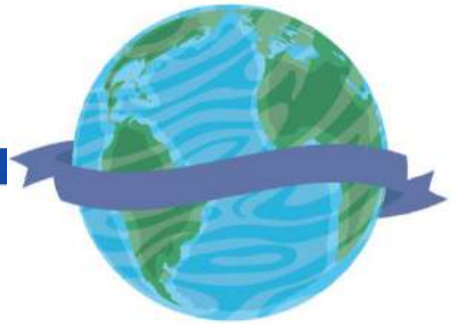
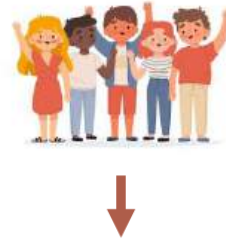
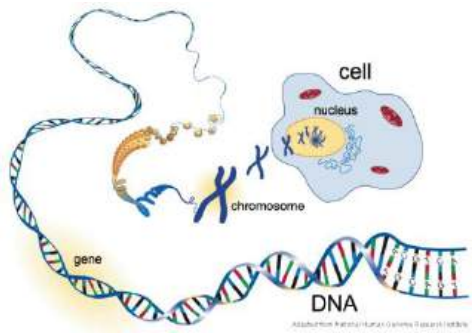
World Health Organization
Regional Office for Europe

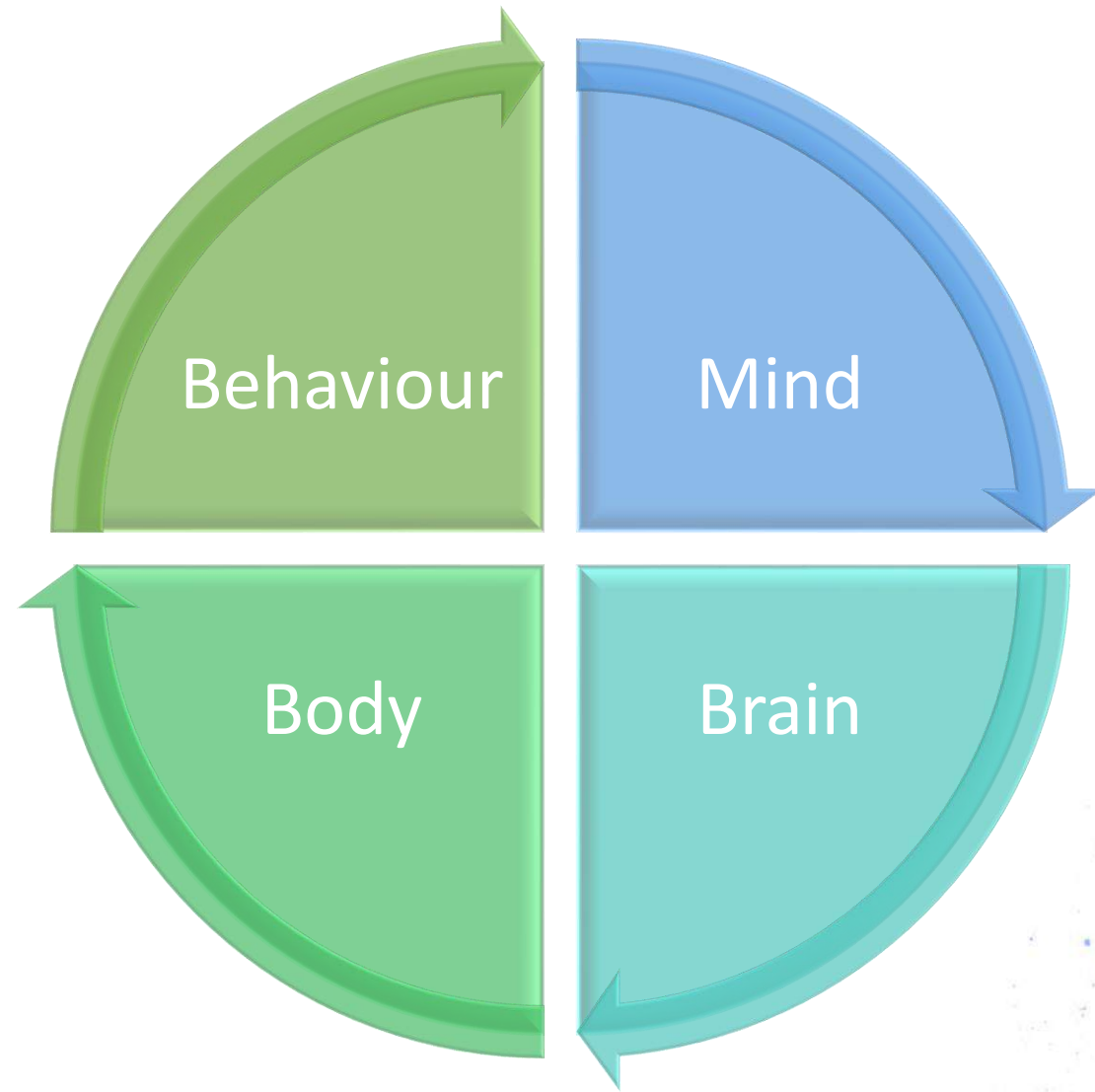
September 2019

Intersectoral action: the arts, health and well-being

Sector brief on Arts

Applying a “zoom” lens





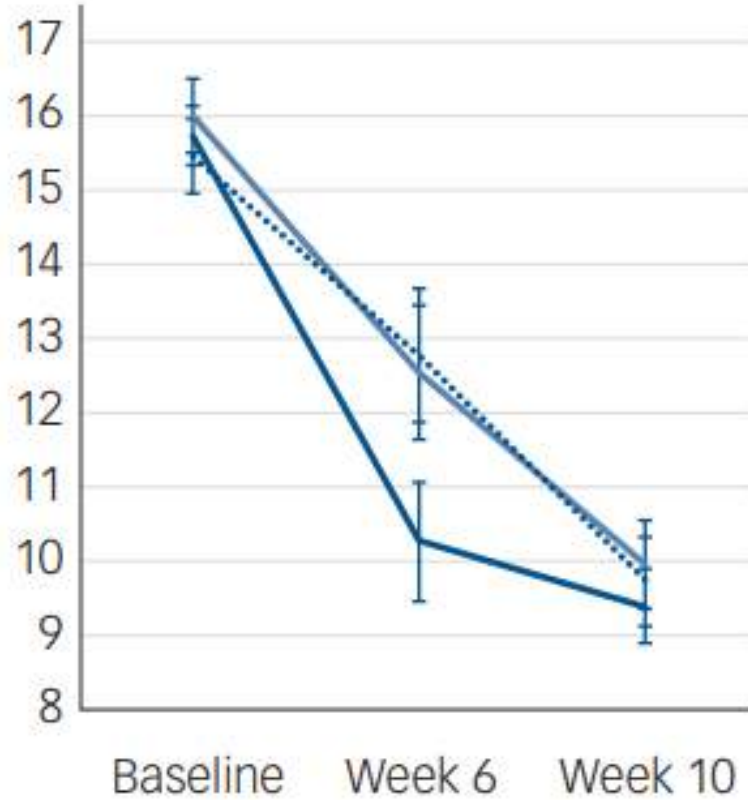
Singing prescribing for postnatal depression in Europe



A GROUND-BREAKING NEW SERVICE FOR MOTHERS WITH POST-NATAL DEPRESSION



Original trial

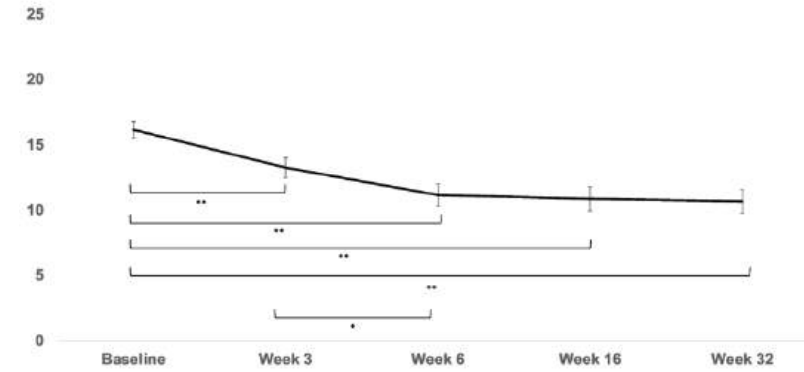


- Singing
- Play
- Usual care

↑ N=148
Fancourt & Perkins (2018)
British Journal of Psychiatry

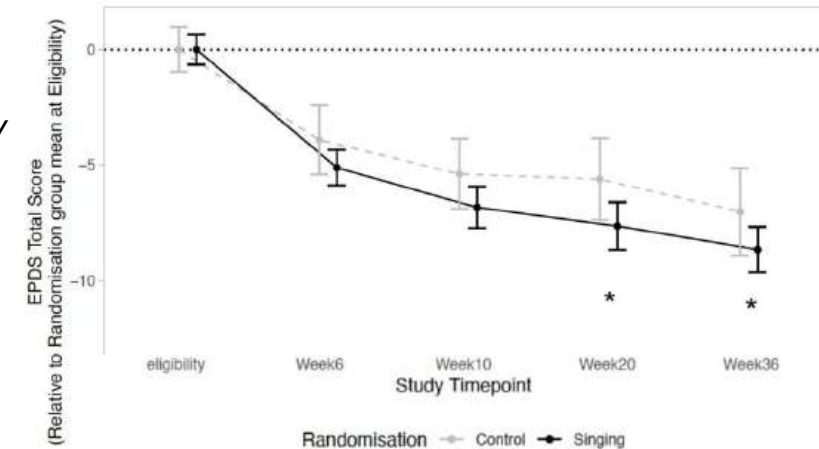
N=199 →
Bind et al. (in preparation)

Online replication



↑ N=37
Bind et al. (2023) Pilot Feasibility Studies

Follow-up trial



Arts prescribing for mental health in Greece



Scientific Director

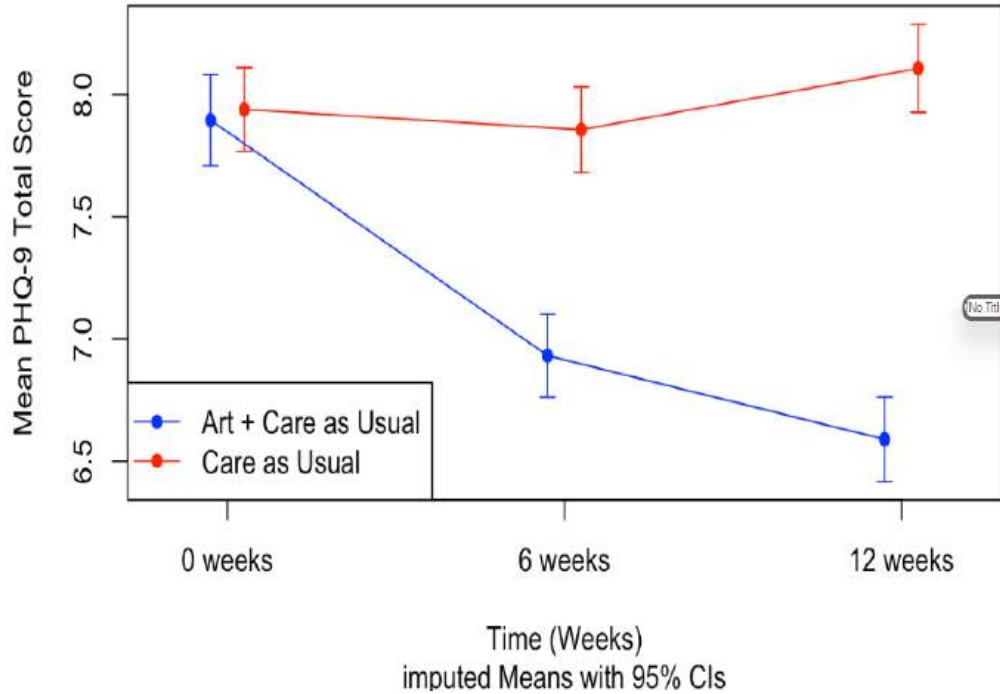
Chairman First Dep/ment of Psychiatry, National and Kapodistrian University of Athens, Vice director UMHRI

Nikos Stefanis

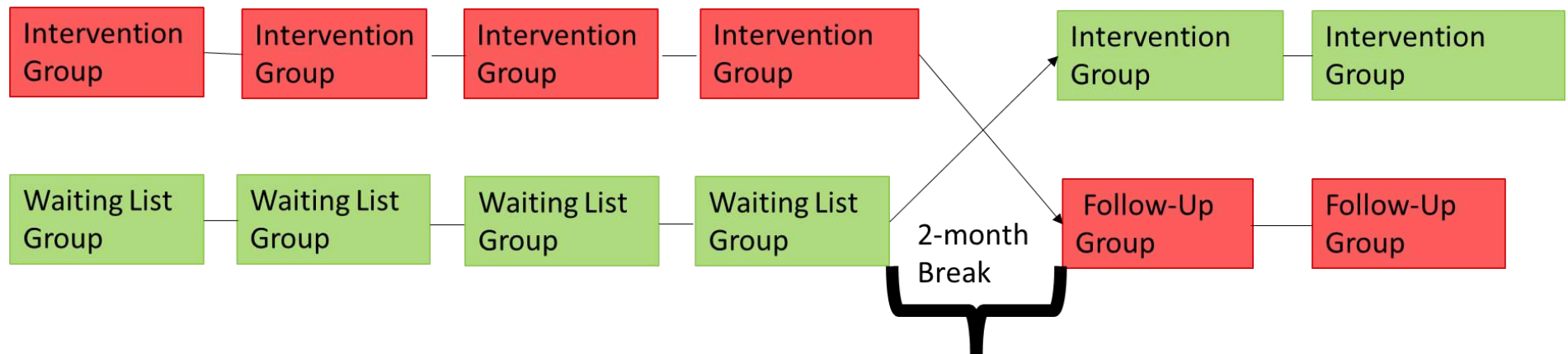
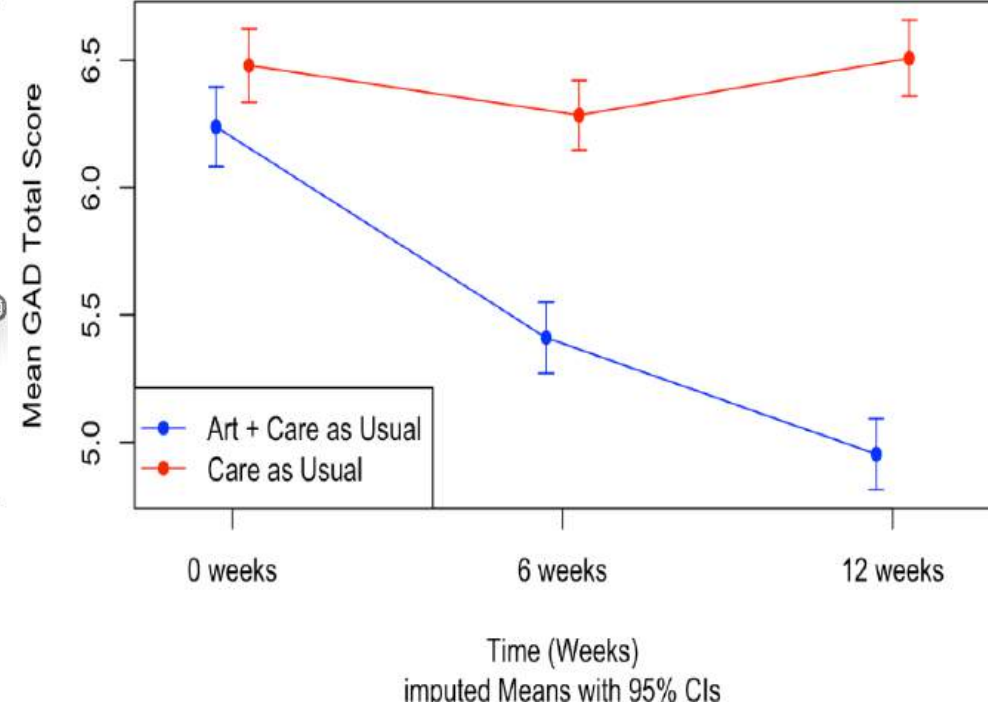
UNIVERSITY MENTAL HEALTH RESEARCH INSTITUTE

(UMHRI)

Depression

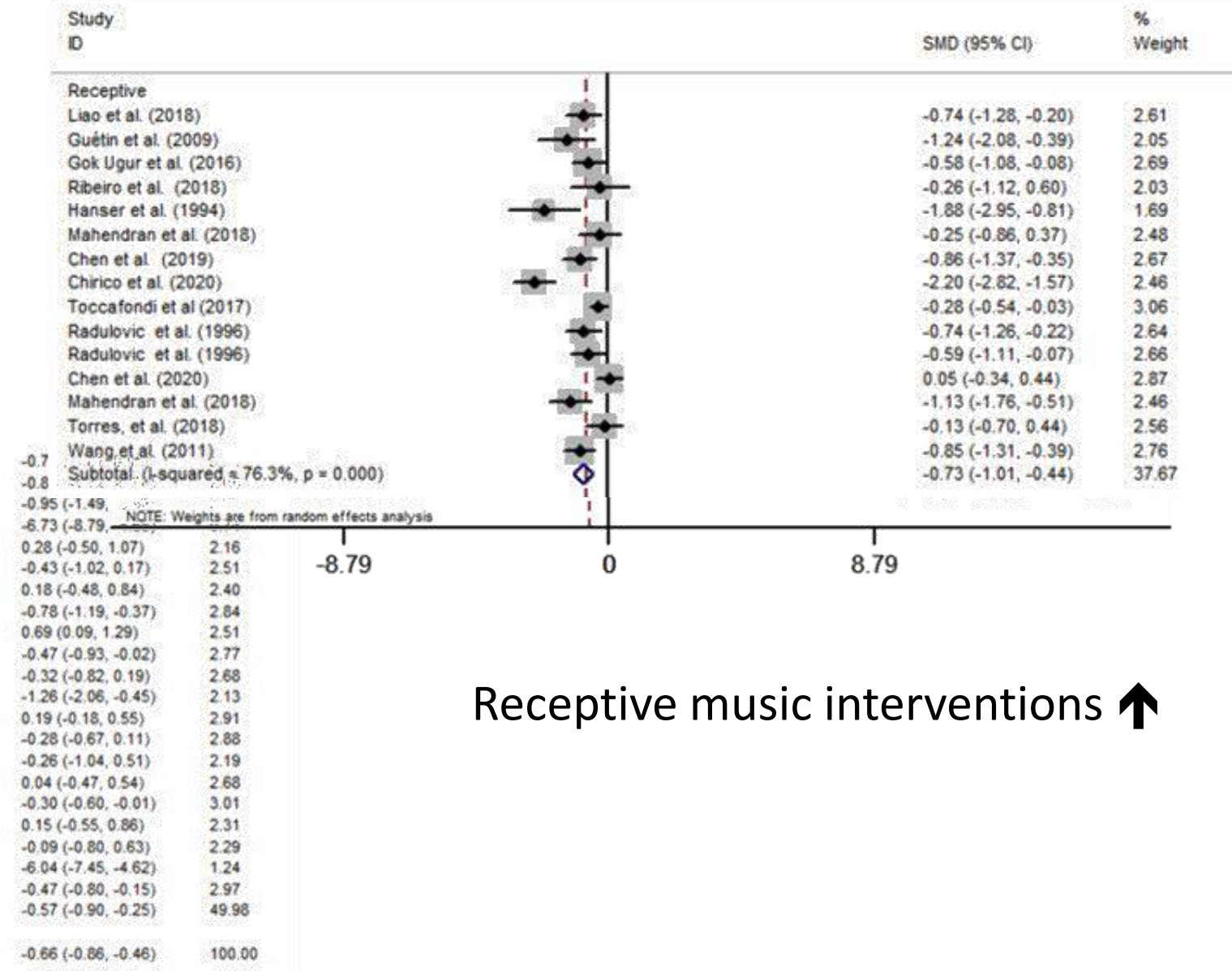
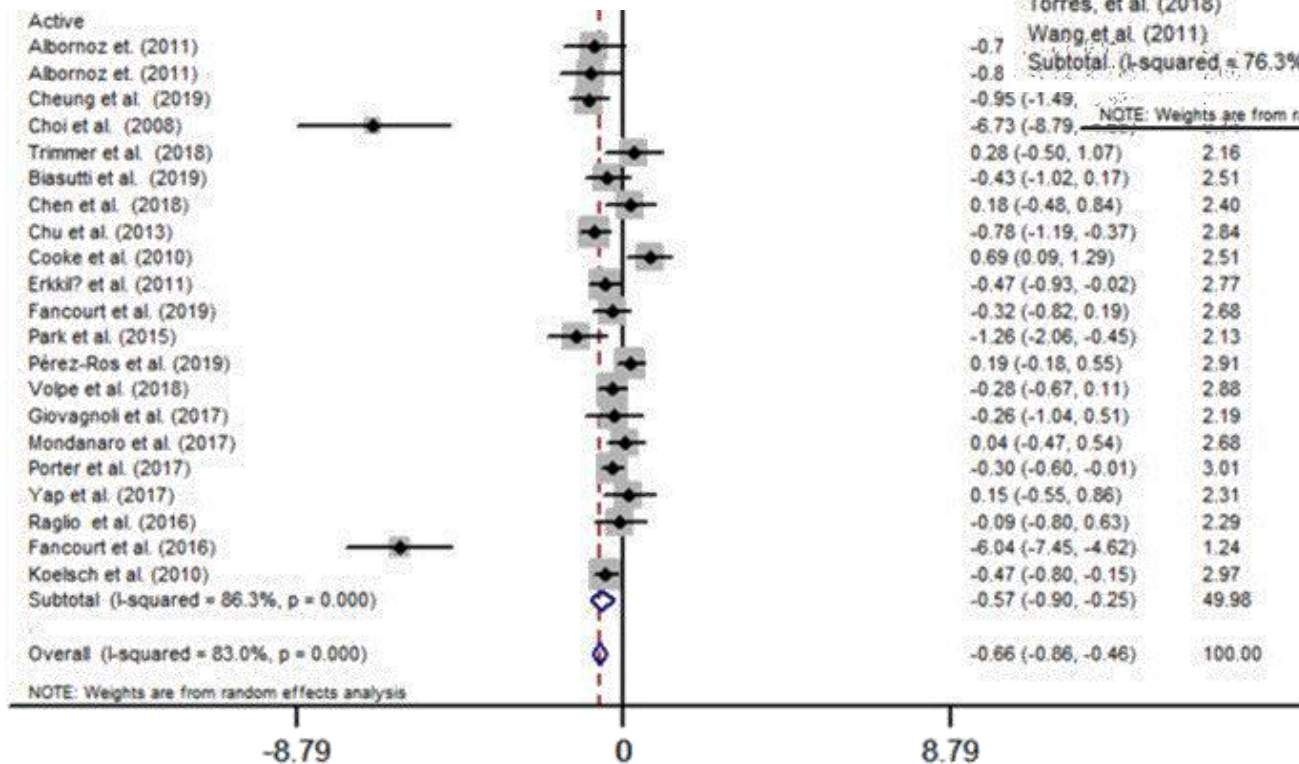


Anxiety



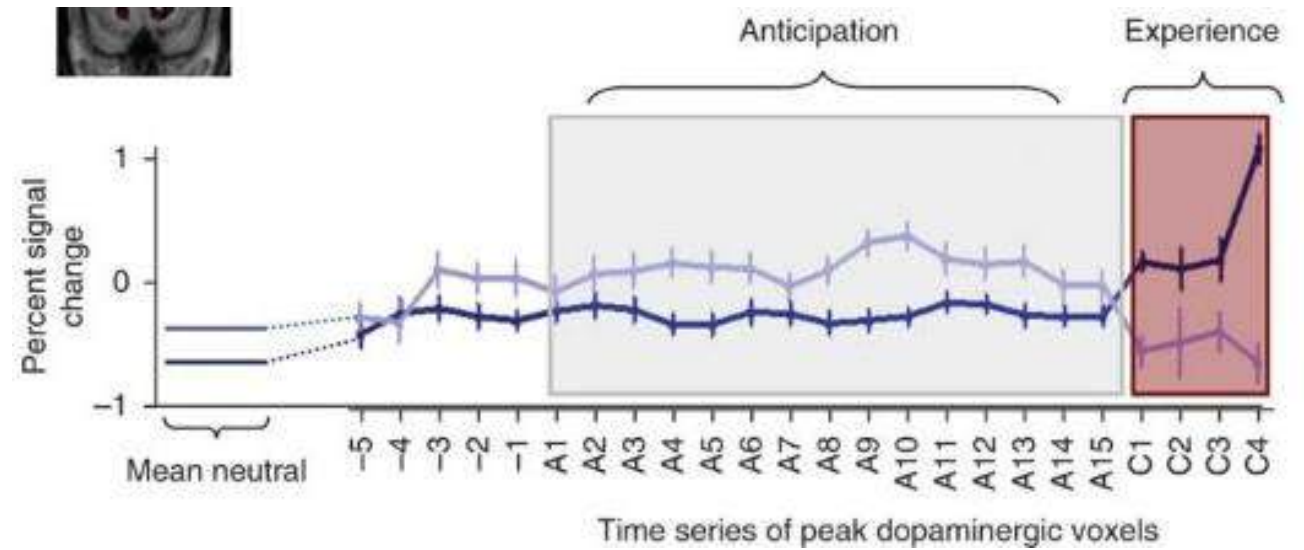
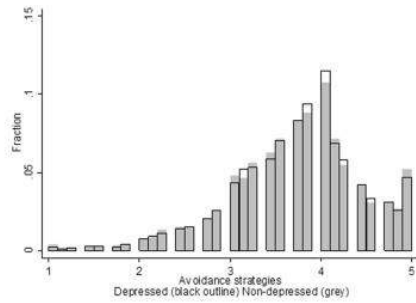
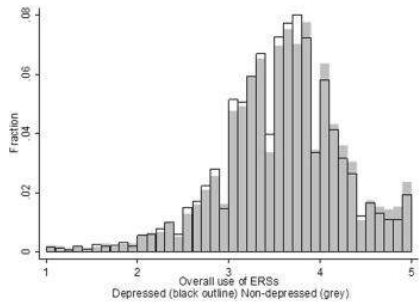
Arts & mental health

Active music interventions ↓

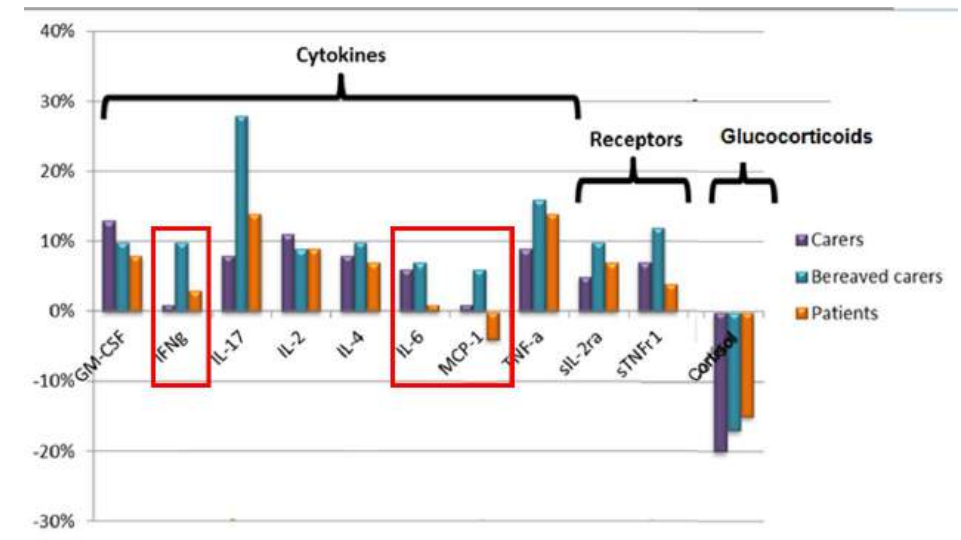
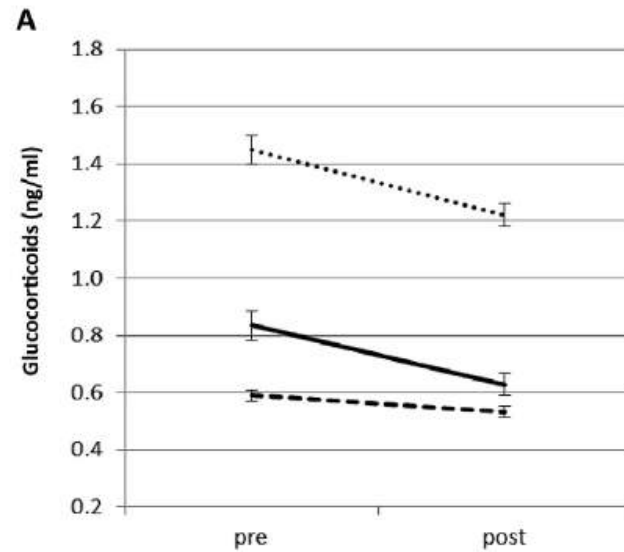


Receptive music interventions ↑

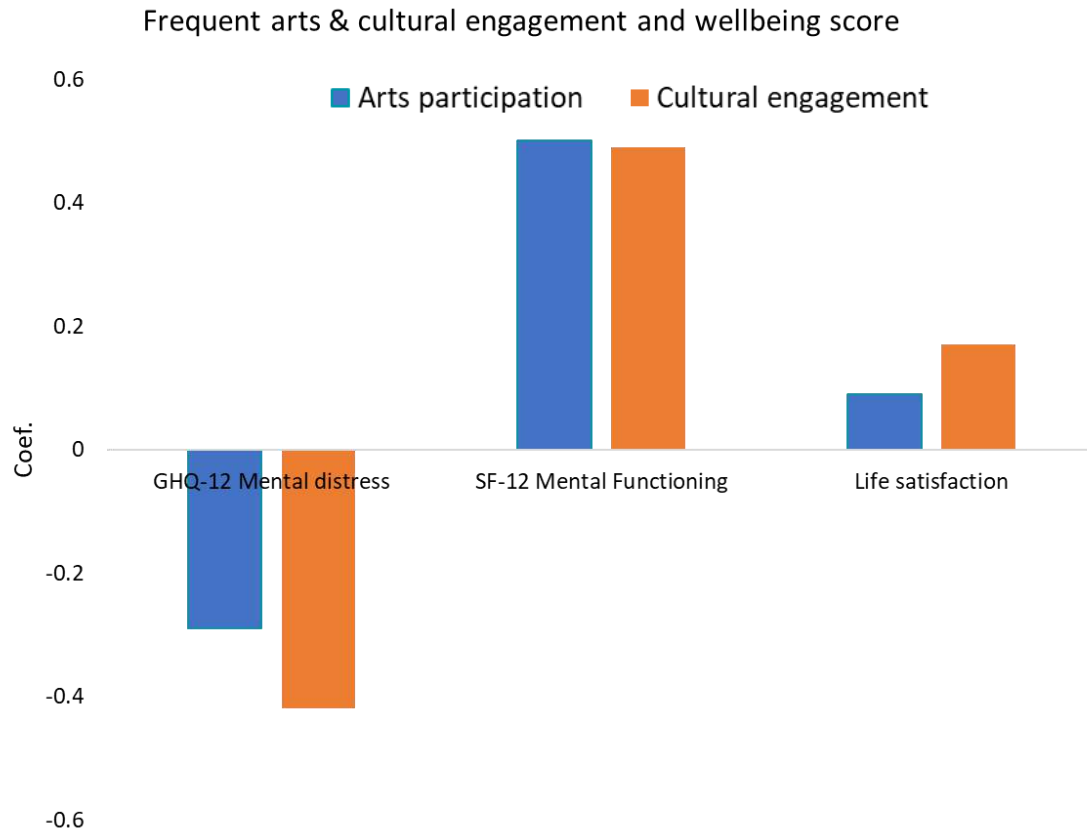
Mental health mechanisms



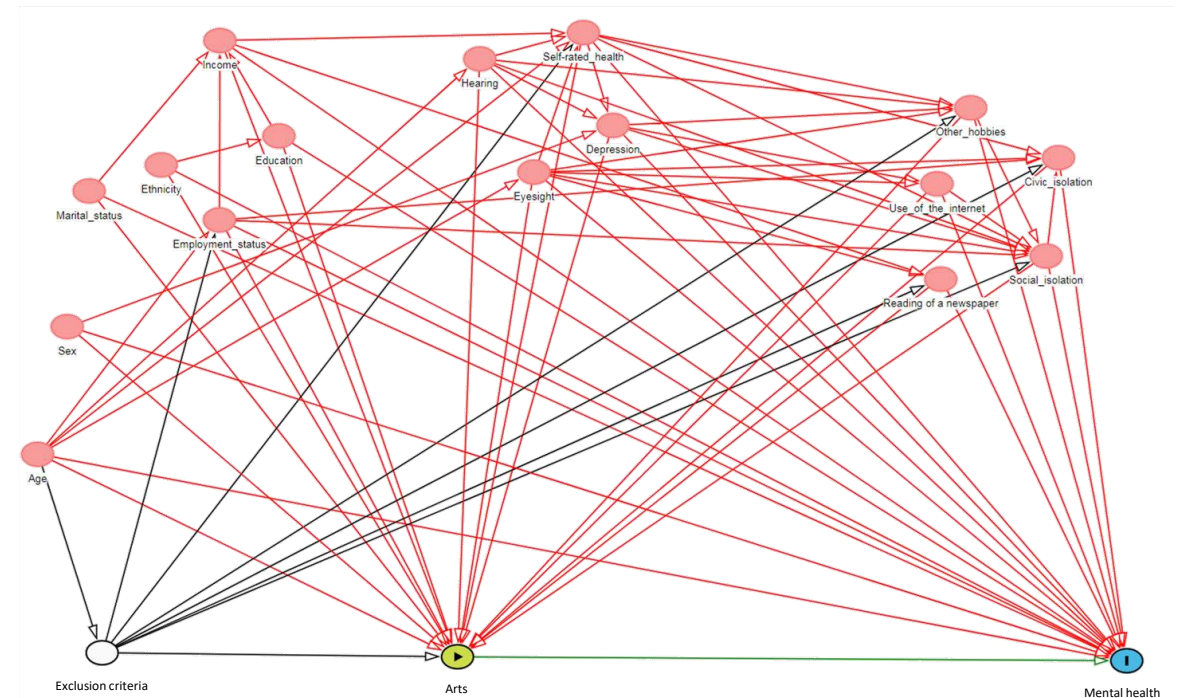
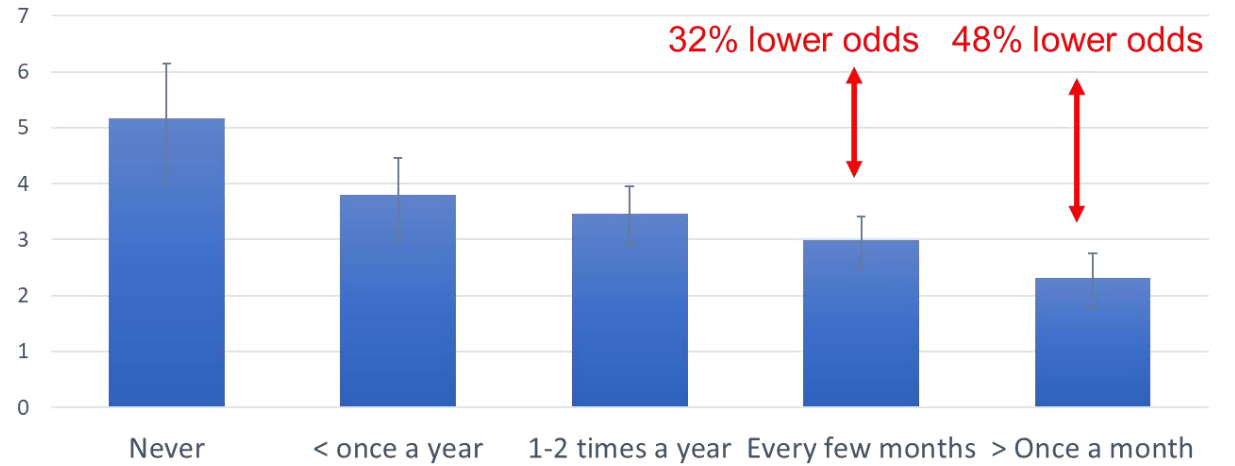
- Avoidance**
 - Distraction
 - Suppression
 - Avoidance
 - Detachment
 - Mindfulness
- Approach**
 - Acceptance
 - Discharge
 - Problem solving
 - Reappraisal
 - Rumination
- Self development**
 - Sense of self
 - Confidence
 - Agency
 - Purpose
 - Self-esteem



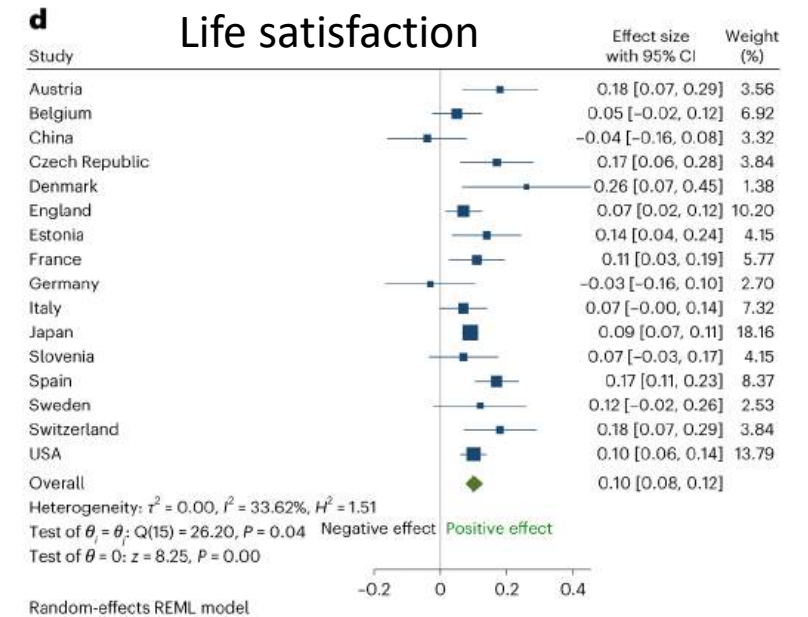
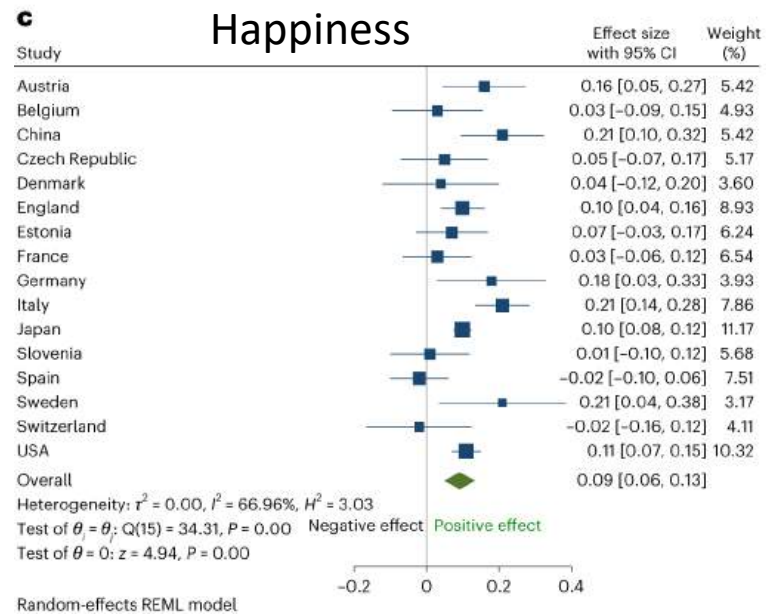
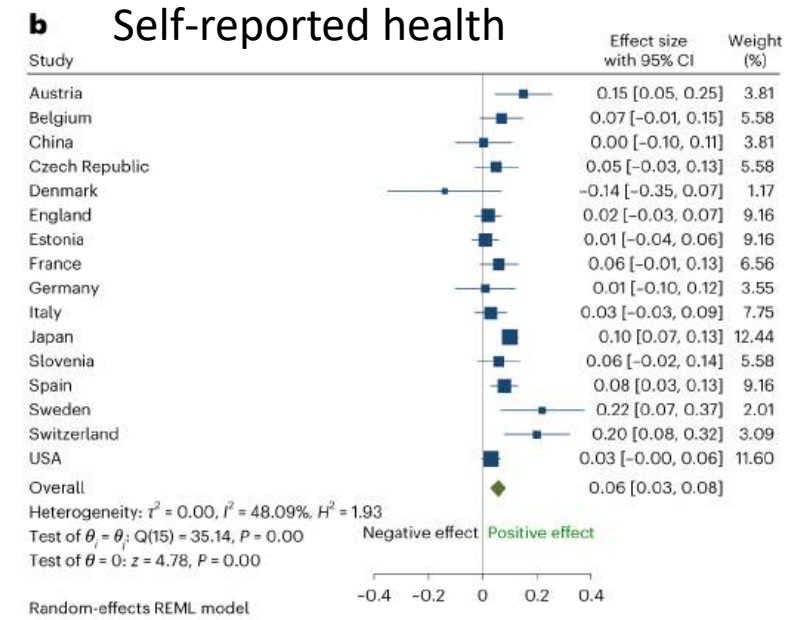
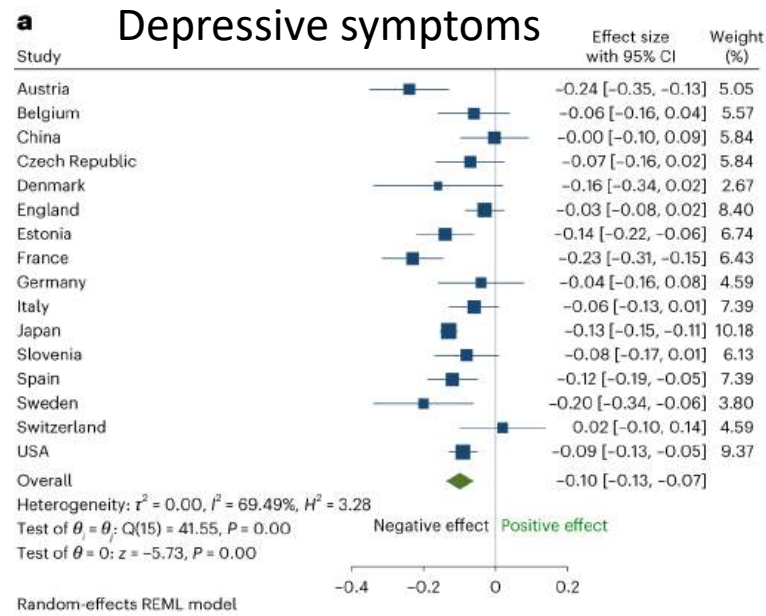
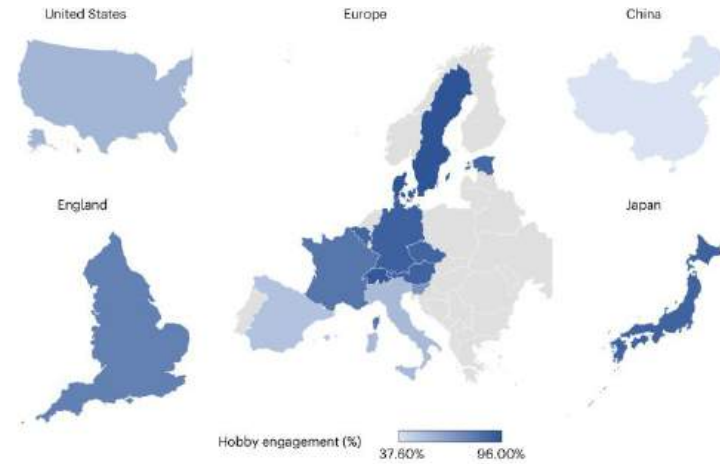
Prevention of mental illness

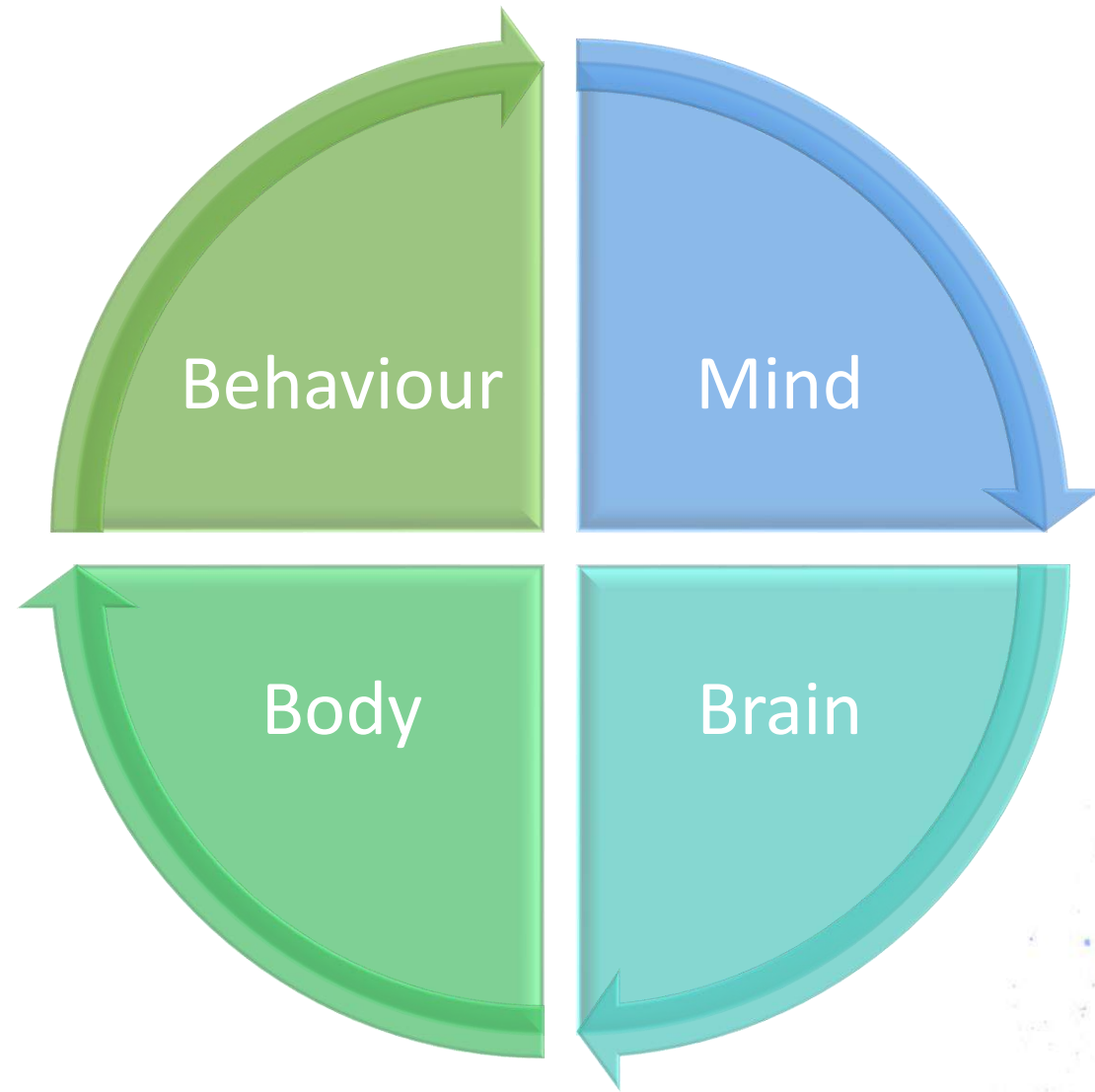


Cultural engagement:
depression incidence rates over 10 years per 100 person-years



Global effects





Music & cognitive development

Music and the brain

Playing and listening to music works several areas of the brain

Corpus callosum:

Connects both sides of the brain

Motor cortex:

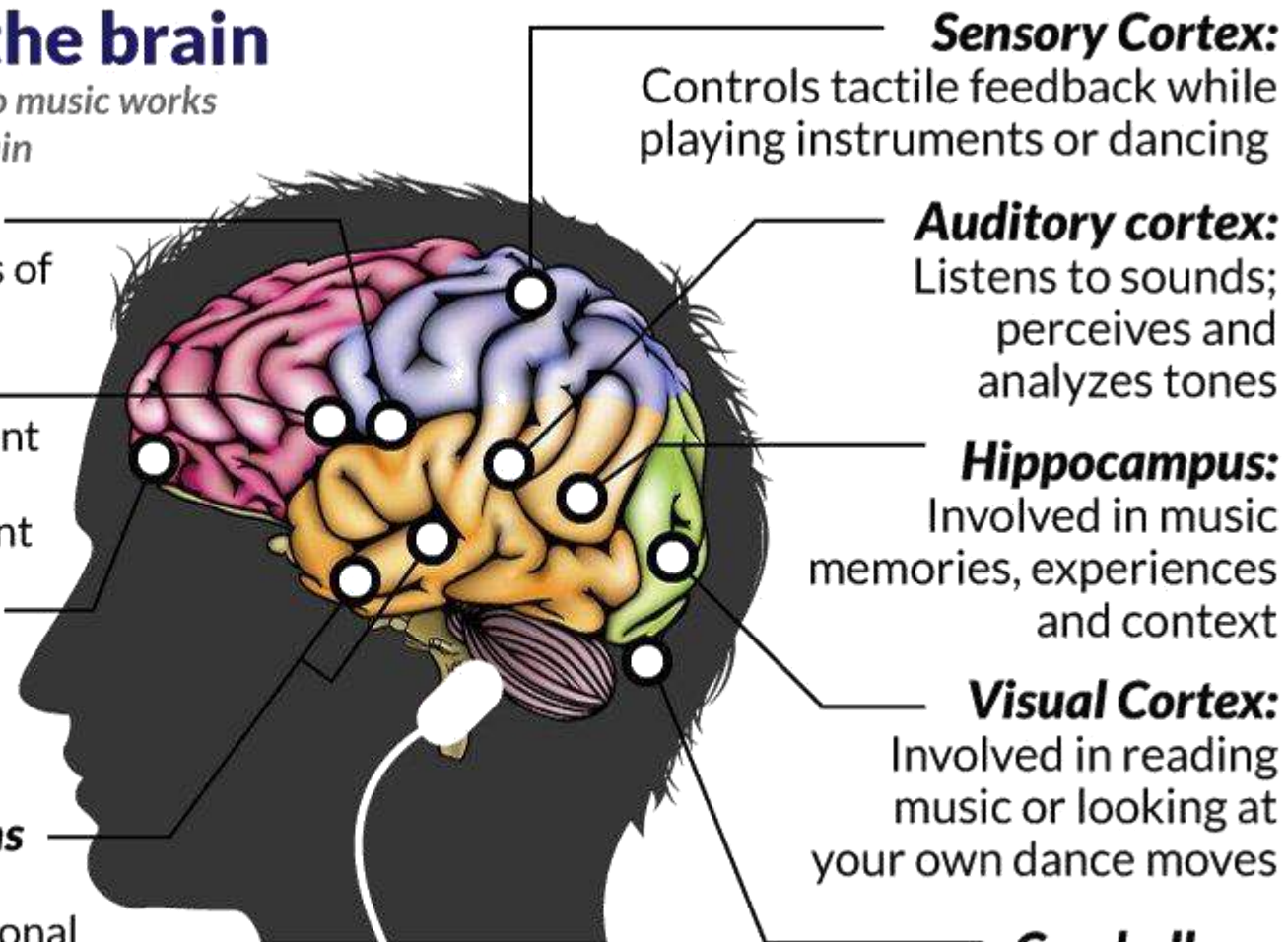
Involved in movement while dancing or playing an instrument

Prefrontal cortex:

Controls behavior, expression and decision-making

Nucleus accumbens and amygdala:

Involved with emotional reactions to music



Sensory Cortex:

Controls tactile feedback while playing instruments or dancing

Auditory cortex:

Listens to sounds; perceives and analyzes tones

Hippocampus:

Involved in music memories, experiences and context

Visual Cortex:

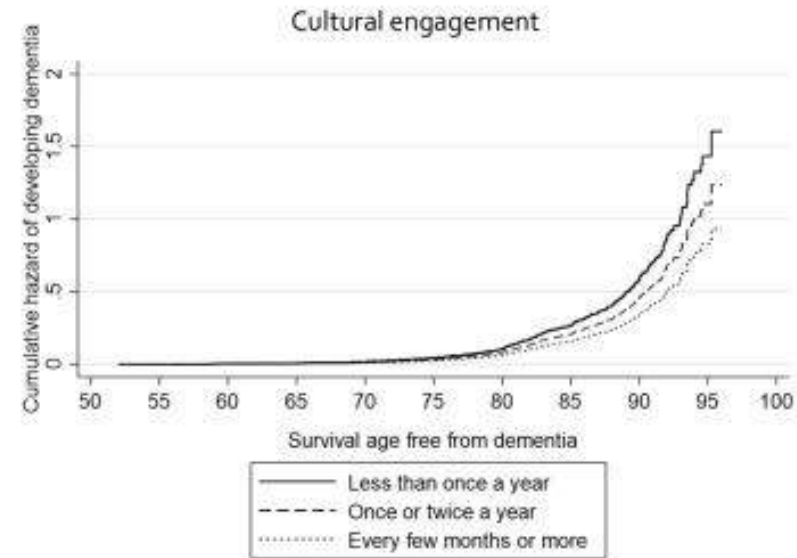
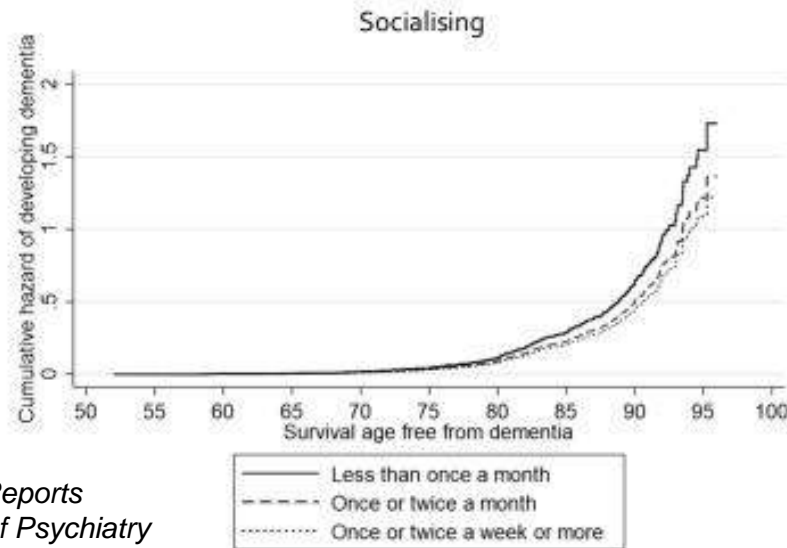
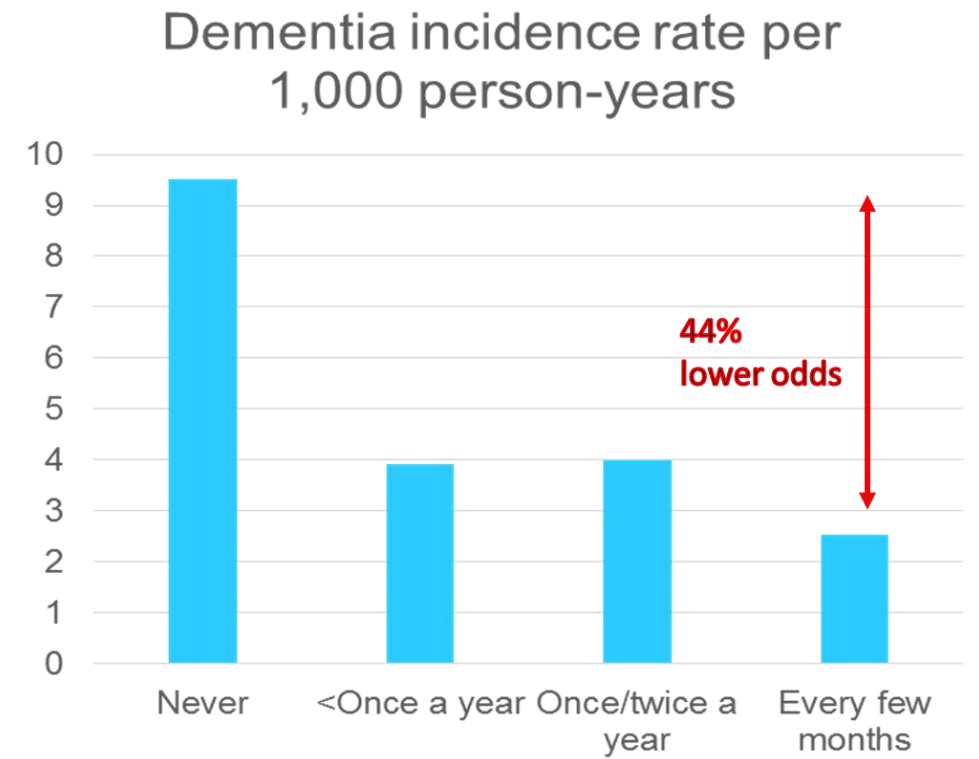
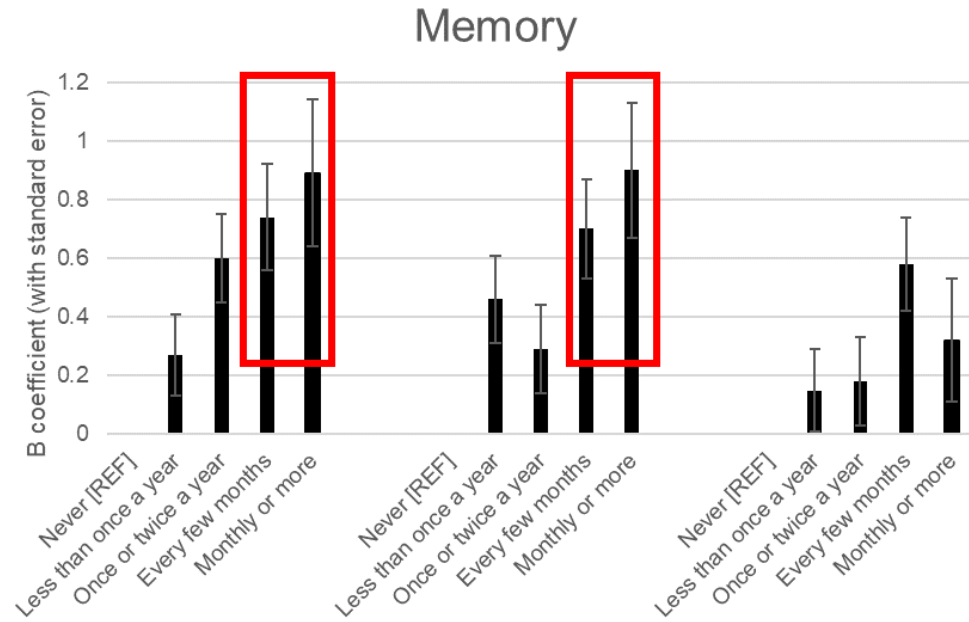
Involved in reading music or looking at your own dance moves

Cerebellum:

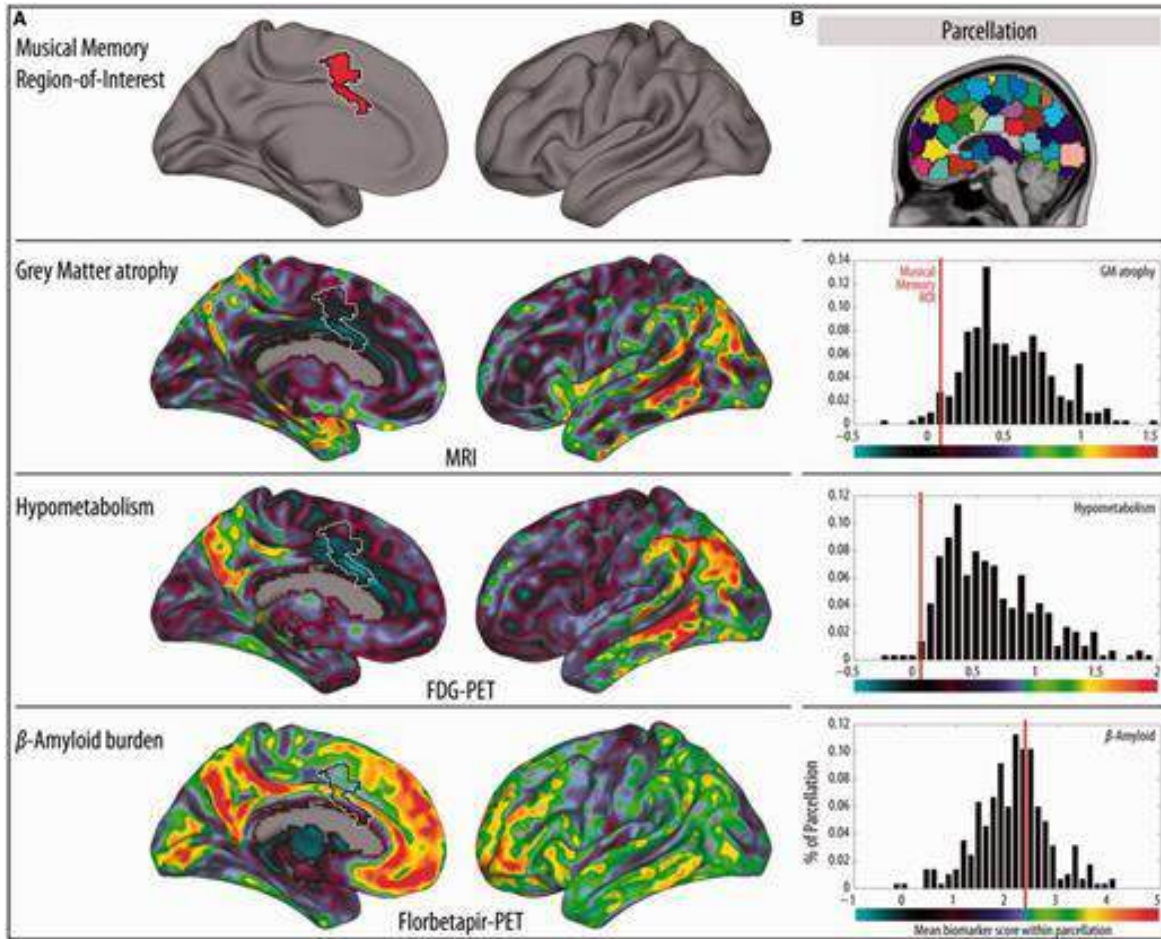
Involved in movement while dancing or playing an instrument, as well as emotional reactions

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SUPERCHARGE YOUR ACADEMY

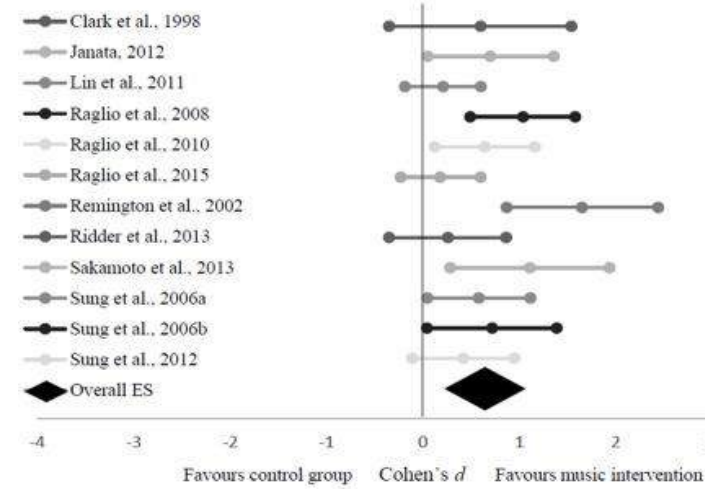
Prevention of cognitive decline



Cognition in dementia



Study



Cohen's *d* (95% CI) N Relative weight

Study	Cohen's <i>d</i> (95% CI)	N	Relative weight
Clark et al., 1998	0.60 (-0.35, 1.54)	18	4.49 %
Janata, 2012	0.70 (0.05, 1.36)	38	7.43 %
Lin et al., 2011	0.21 (-0.19, 0.60)	100	14.86 %
Raglio et al., 2008	1.04 (0.49, 1.58)	59	9.17 %
Raglio et al., 2010	0.64 (0.12, 1.16)	60	9.62 %
Raglio et al., 2015	0.18 (-0.23, 0.60)	120	11.72 %
Remington et al., 2002	1.65 (0.87, 2.44)	34	5.93 %
Ridder et al., 2013	0.26 (-0.35, 0.86)	42	8.13 %
Sakamoto et al., 2013	1.11 (0.29, 1.94)	39	5.47 %
Sung et al., 2006a	0.58 (0.05, 1.12)	57	9.34 %
Sung et al., 2006b	0.72 (0.04, 1.39)	36	7.18 %
Sung et al., 2012	0.42 (0.95, -0.11)	55	9.34 %
Overall ES	0.61 (0.38, 0.84)	658	100 %

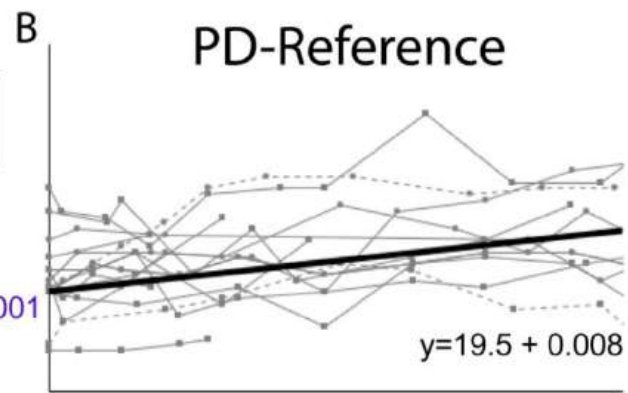
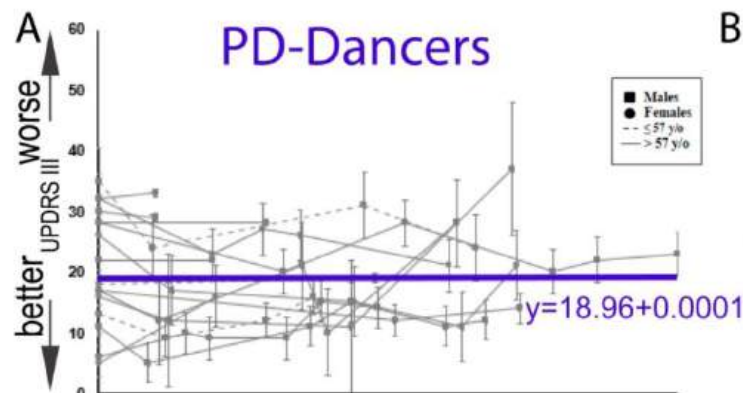
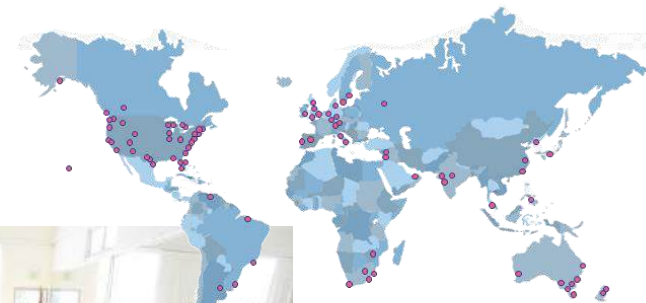
Music & behavioural agitation ↑

Hogeweyk



Arts & neuro-rehabilitation

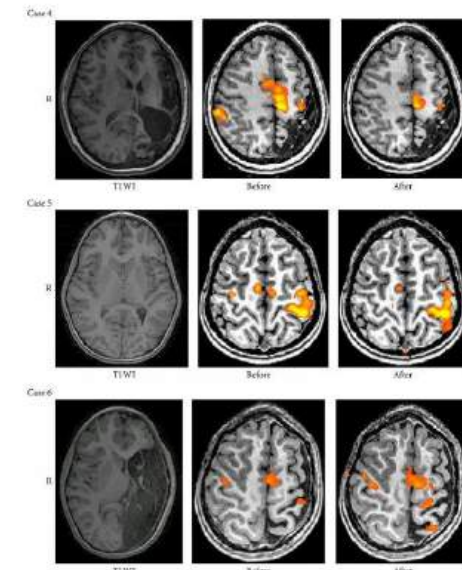
DANCE *for* PD[®]
CLASSES | TRAINING | RESOURCES



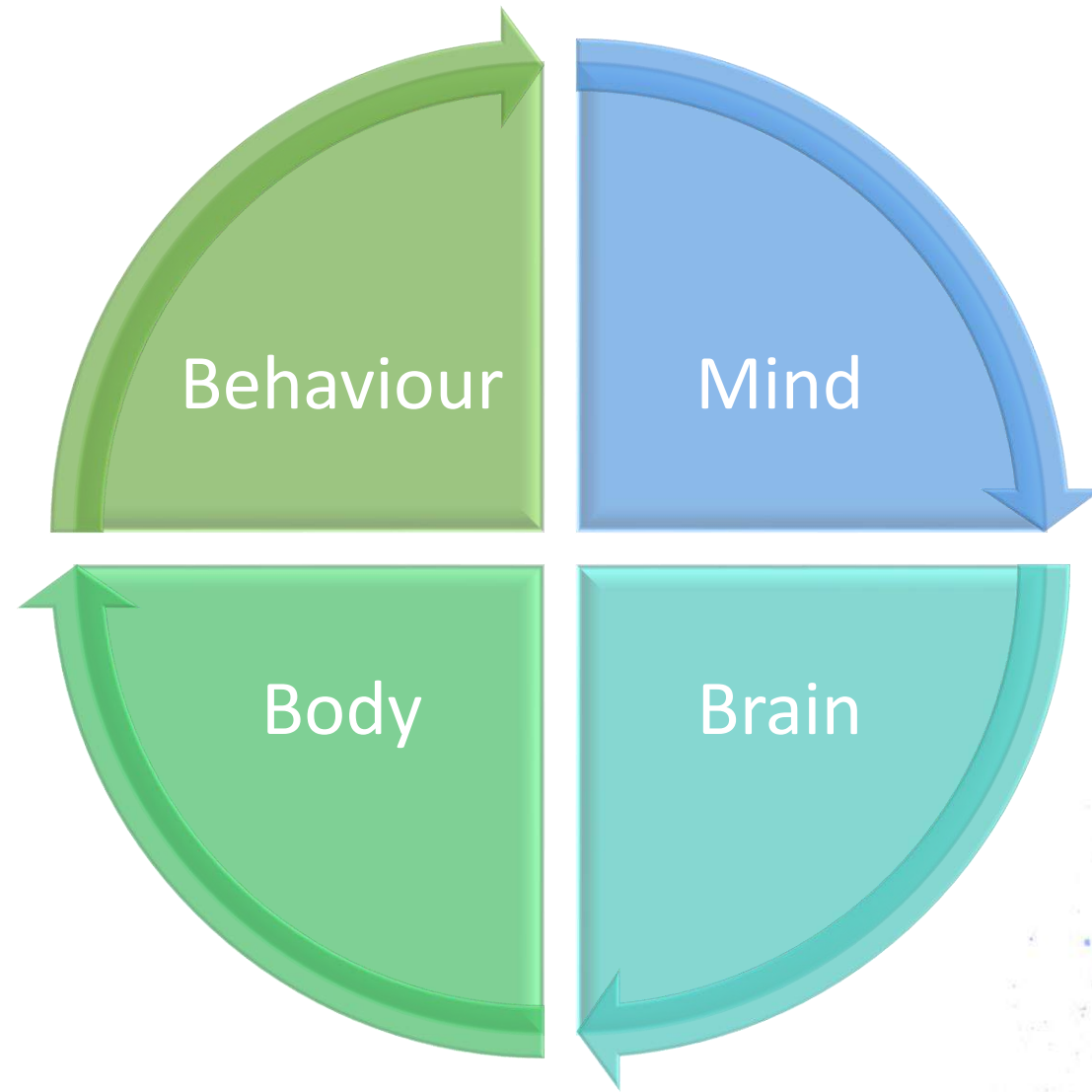
Music and gait in stroke ↓

Study or subgroup	Music		Control		Mean Difference Random, 95% CI
	N	Mean(SD)	N	Mean(SD)	
Kim 2012b	10	61.8 (8.3)	10	48.3 (5)	
Lichun 2011	15	47.3 (1.2)	15	32.5 (1.5)	
Park 2010a	13	32.4 (12.6)	12	22.2 (9)	
Suh 2014	8	1.5 (2.4)	8	-1.3 (11.8)	
Thaut 1997	10	48 (18)	10	32 (10)	
Thaut 2007	43	34.5 (9.1)	35	20.3 (6.5)	
Subtotal ***	139		129		

Heterogeneity: Tau²=9.07; Chi²=20.28, df=8(P=0.01); I²=60.55%
Test for overall effect: Z=7.56(P<0.0001)



Magic for hemiplegia →

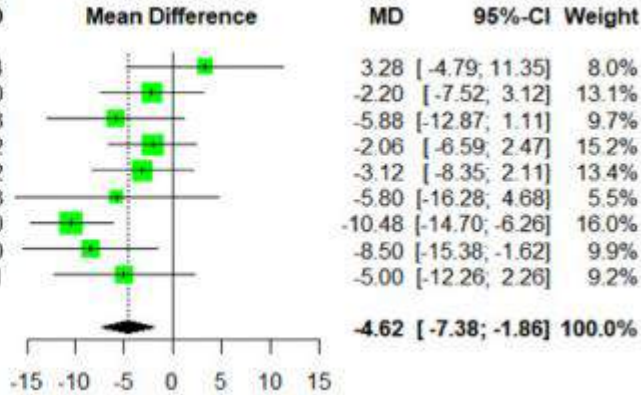


Music for stress and pain

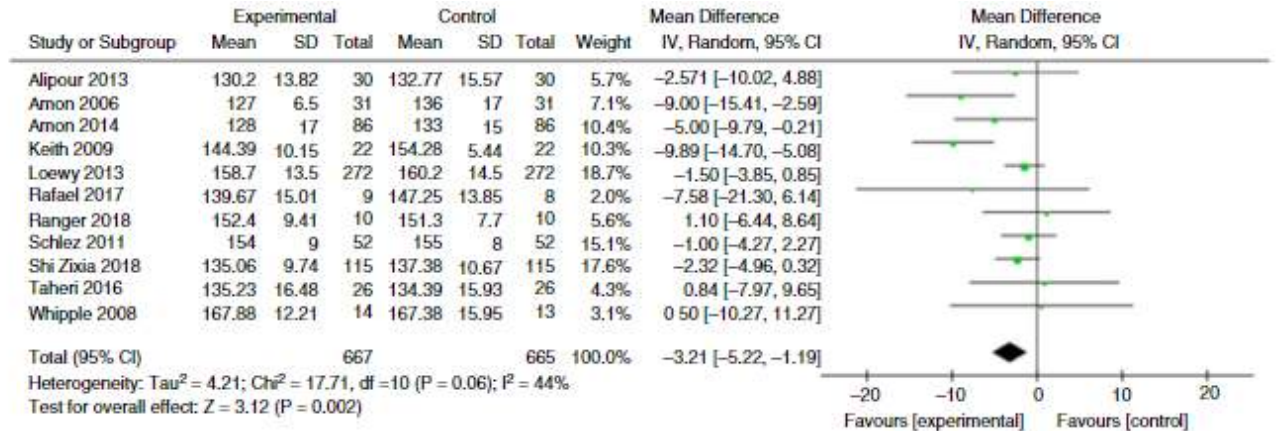
Blood pressure in adults undergoing surgery ↓

Study	Experimental			Control		
	Total	Mean	SD	Total	Mean	SD
Aris 2021	28	-2.25	18.41	28	-5.53	11.64
Cutshall 2011	49	-3.80	15.50	51	-1.60	11.20
Kushnir 2012	28	-3.53	14.34	32	2.35	13.13
Lee 2017	50	-2.46	13.05	50	-0.40	9.82
Liu 2015	56	-3.61	16.43	56	-0.49	11.32
Roshani 2020	30	-10.50	26.62	30	-4.70	12.23
Ugras 2018	45	-8.04	12.54	45	2.44	7.20
Wiwatwongwana 2016	44	-3.20	16.00	47	5.30	17.50
Wupy 2017	19	-7.42	11.33	19	-2.42	11.51

Random effects model 349 358
Heterogeneity: $I^2 = 46\%$, $\tau^2 = 7.7359$, $p = 0.06$



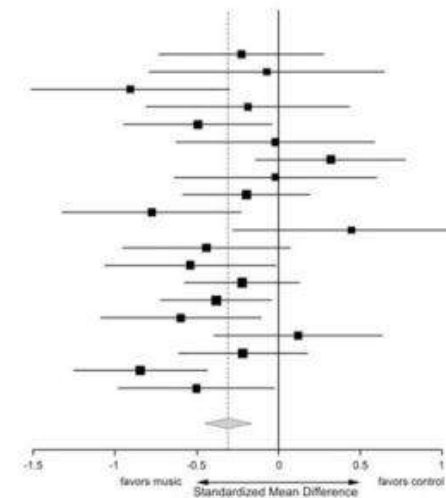
Opioid requirements in hospital →



Heart rate in neonates in NICU ↑

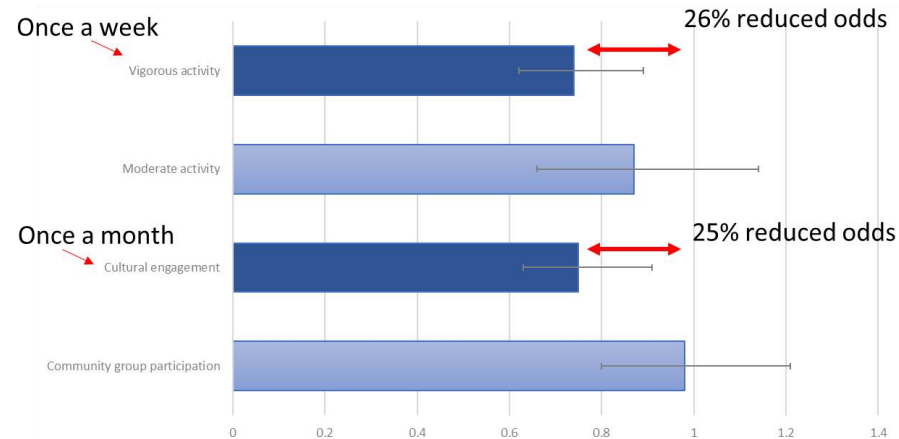
N	Music		N _c	Control		N _c	Measurement duration
	Mean	SD		Mean	SD		
61	20.3	16.6	32	26.4	34.5	29	Hospital length of stay
30	12.04	14.43	15	12.90	8.05	15	Hospital length of stay
47	16	9	20	33	23	27	Intensive Care Unit
40	14.4	13.2	20	16.9	12.8	20	PACU
77	1.6	1.7	38	2.5	1.9	39	First postoperative hour
42	4.73	5.02	21	4.83	5.57	21	First 24 postoperative hours
75	10.0	7.19	40	8.0	4.81	35	Day care surgery
40	60	480.8	20	69	494.2	20	PACU
102	24.38	36.68	51	35.50	69.24	51	First 72 postoperative hours
55	2.2	2.9	29	4.3	2.4	26	PACU
30	85.8	40.0	15	69.4	30.9	15	First 24 postoperative hours
60	1.880	1.611	30	2.517	2.107	30	First 12 postoperative hours
58	61.7	31.9	30	81.5	40.5	28	First 72 postoperative hours
125	2.6	3.2	62	3.4	3.9	63	First 2 postoperative hours
153	1.95	2.65	102	3.1	3.6	51	PACU
75	1.4	2.12	50	2.9	3.1	25	First postoperative hour
58	12.6	6.5	28	11.8	6.6	30	First 24 postoperative hours
100	17.92	4.932	50	19.18	6.474	50	Until 6 hours after PACU discharge
100	28.9	6.4	50	36.4	10.7	50	First 24 postoperative hours
70	30.743	6.251	35	35.257	10.902	35	First 24 postoperative hours
Total	1398		738			660	

Pooled SMD -0.31 [95% CI -0.45 to -0.16], $p < 0.001$, $I^2 = 44.3$

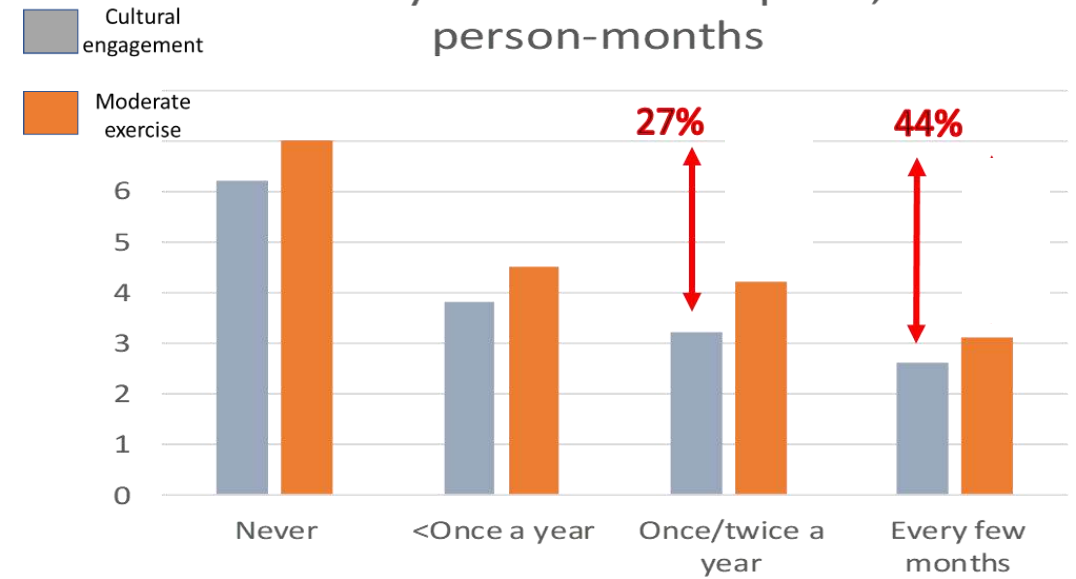


Prevention of physical decline

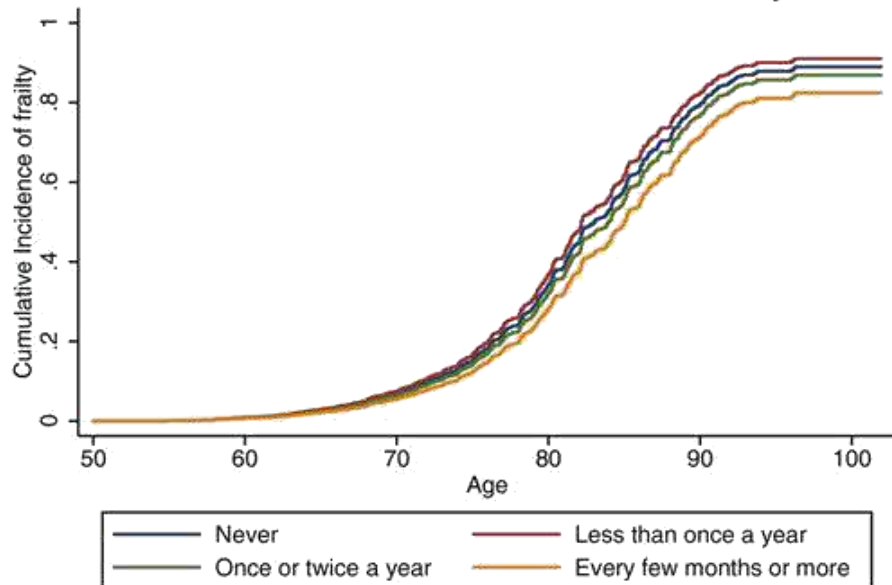
Cultural engagement and chronic pain



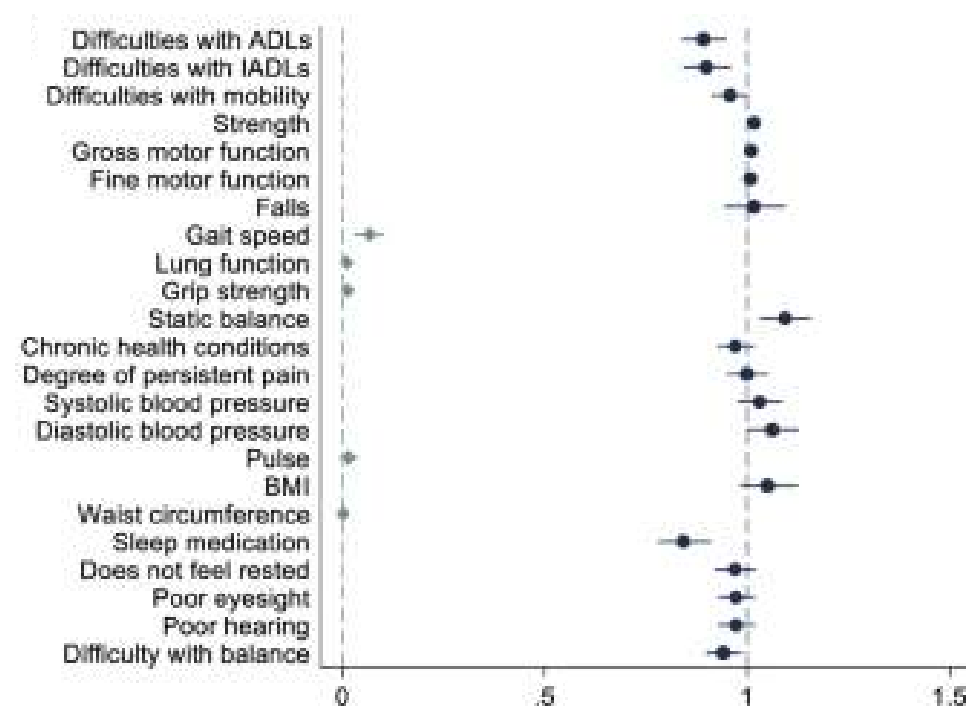
Disability incidence rate per 1,000 person-months



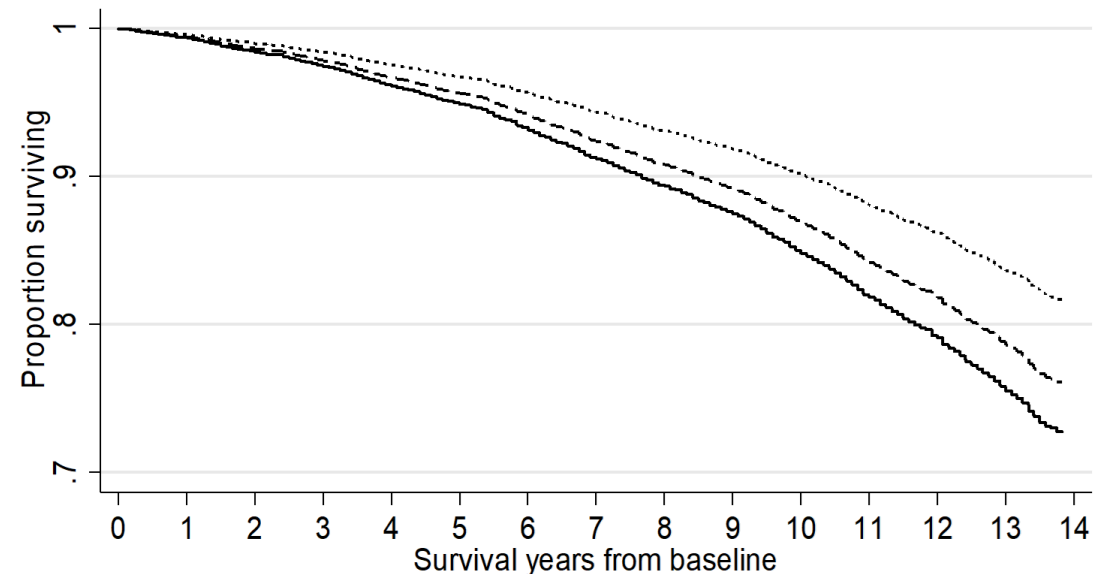
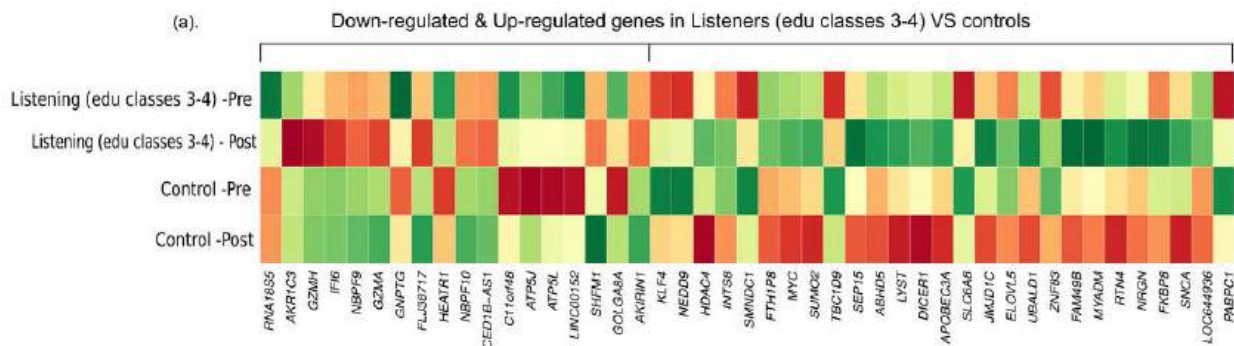
Modelled cumulative incidence of frailty



Fancourt & Steptoe (2018) *The Lancet*
 Fancourt & Steptoe (2018) *Journal of Pain*
 Rogers & Fancourt (2020) *J Gerontol B*
 Bone et al. (2024) *Nature Communications*

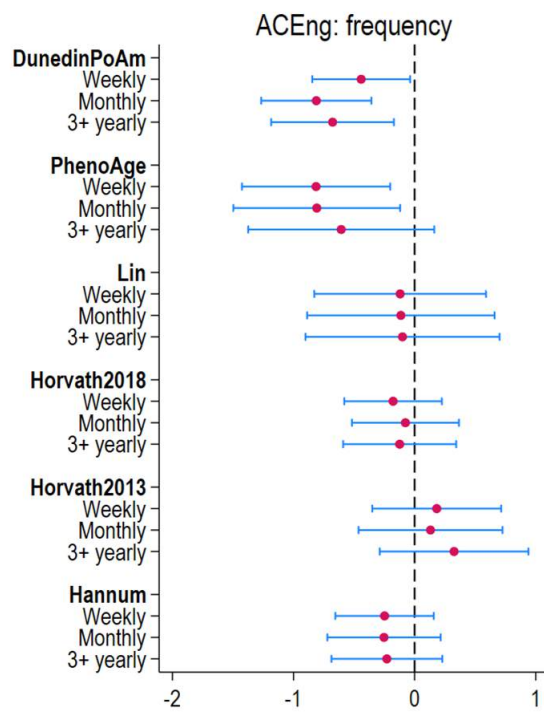
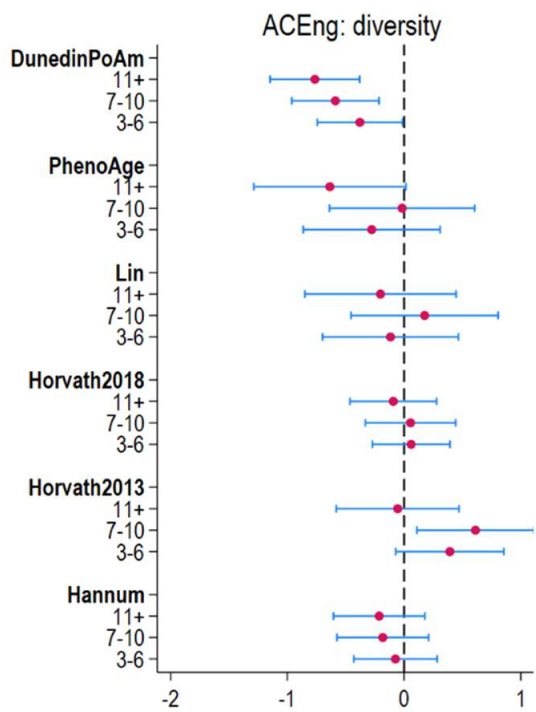


Ageing & mortality



Music and gene expression ↑

Arts and epigenetic ageing ↓

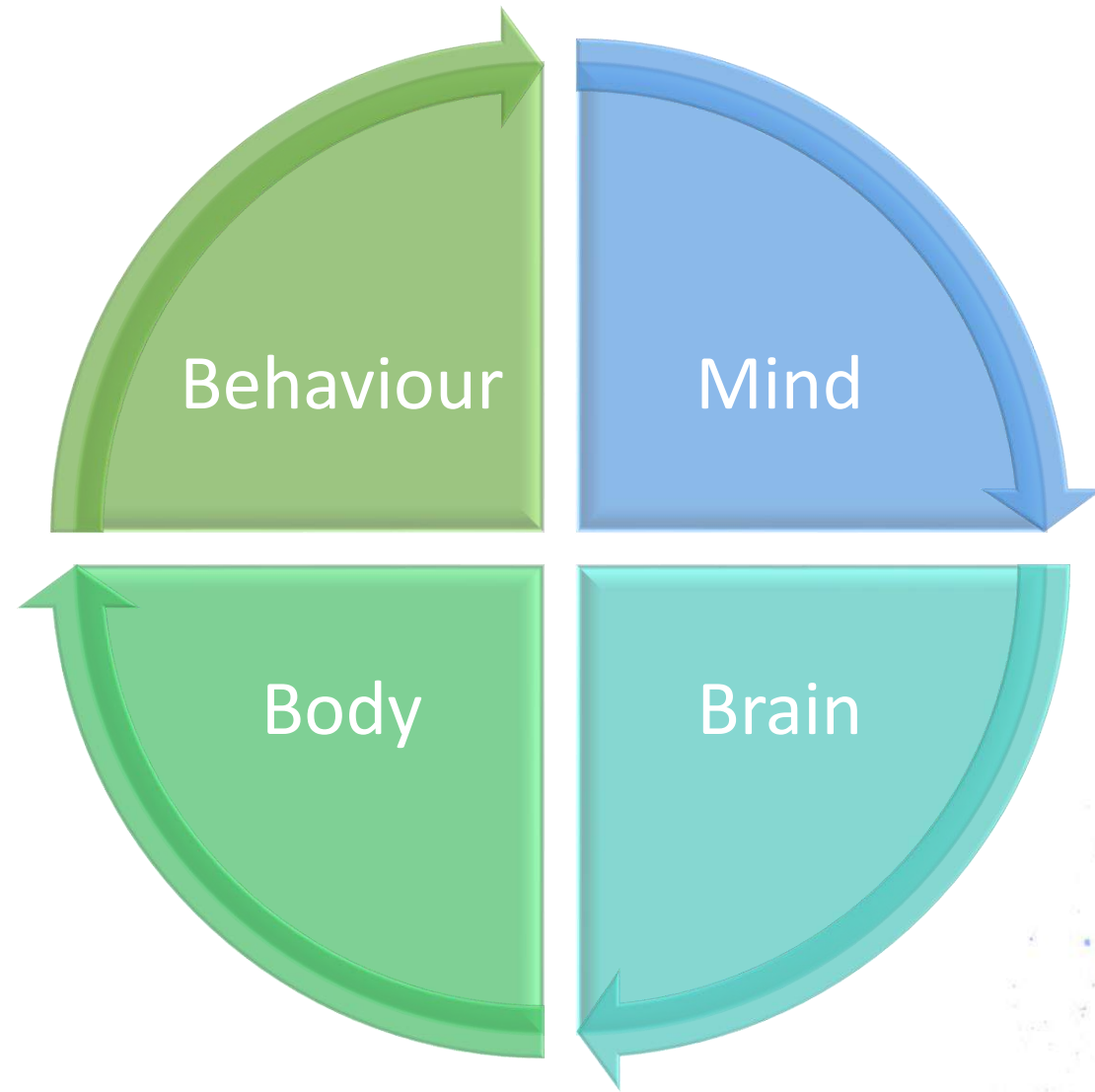


Explanatory factors	Adjusted hazard ratio (95% CI)	P	PPAE (%)
Basic model (age)	0.67 (0.63 to 0.71)	<0.001	—
+sex	0.67 (0.63 to 0.72)	<0.001	0
+education, occupational status, and employment status	0.67 (0.63 to 0.72)	<0.001	0
+wealth	0.70 (0.65 to 0.75)	<0.001	9.1
+cancer, lung disease, cardiovascular disease, or other long term condition	0.67 (0.62 to 0.71)	<0.001	0
+mobility and disability	0.71 (0.66 to 0.75)	<0.001	12.1
+depressive symptoms and psychiatric conditions	0.68 (0.64 to 0.72)	<0.001	3.0
+cognition	0.72 (0.67 to 0.76)	<0.001	15.2
+sensory impairment (hearing and eyesight)	0.67 (0.63 to 0.72)	<0.001	0
+sedentary behaviours	0.69 (0.65 to 0.74)	<0.001	6.1
+other health behaviours (drinking and smoking)	0.70 (0.65 to 0.74)	<0.001	9.1
+loneliness, living status, and marital status	0.69 (0.64 to 0.73)	<0.001	6.1
+social, civic, and hobby engagement	0.71 (0.67 to 0.76)	<0.001	12.1
=all	0.80 (0.75 to 0.87)	<0.001	41.9

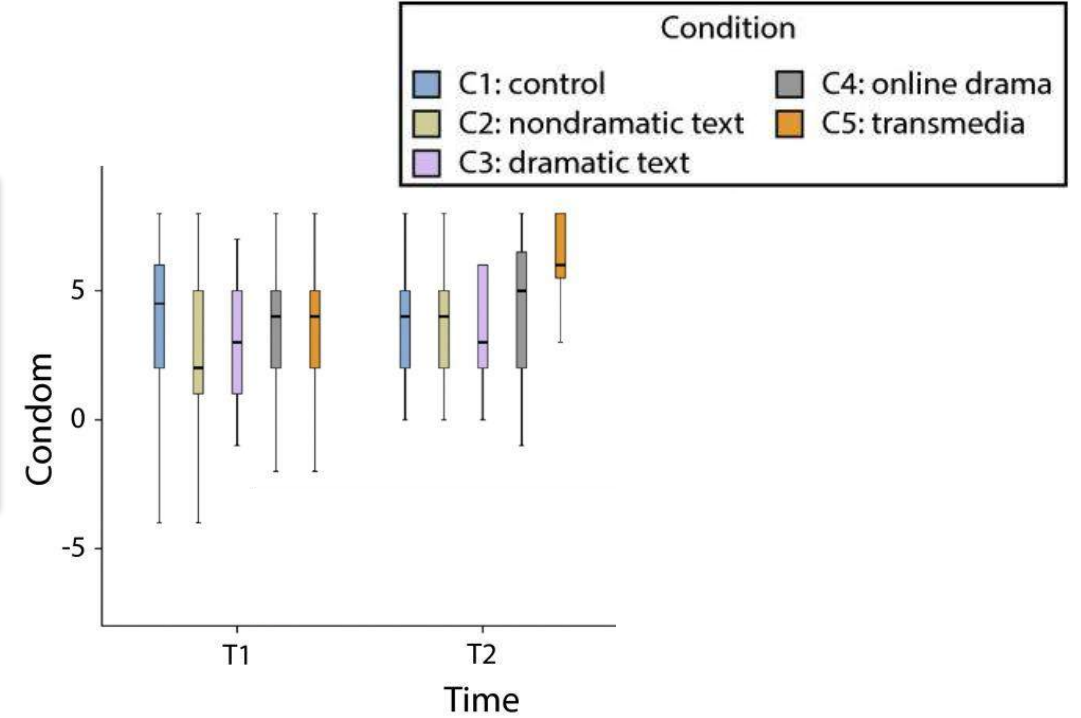
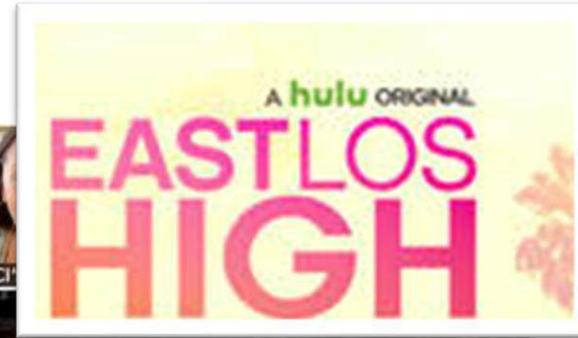
Bu et al. 2024 J Gerontol Series B
Fancourt & Steptoe 2019 BMJ

Bu et al. In Prep
Kanduri et al. 2015 PeerJ





Arts in public health comms

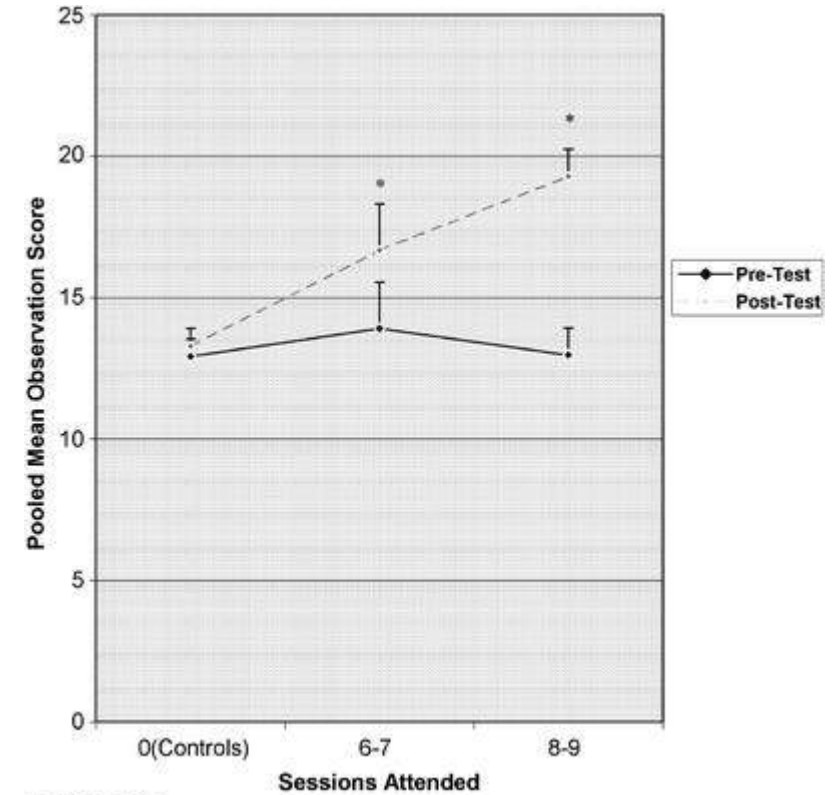
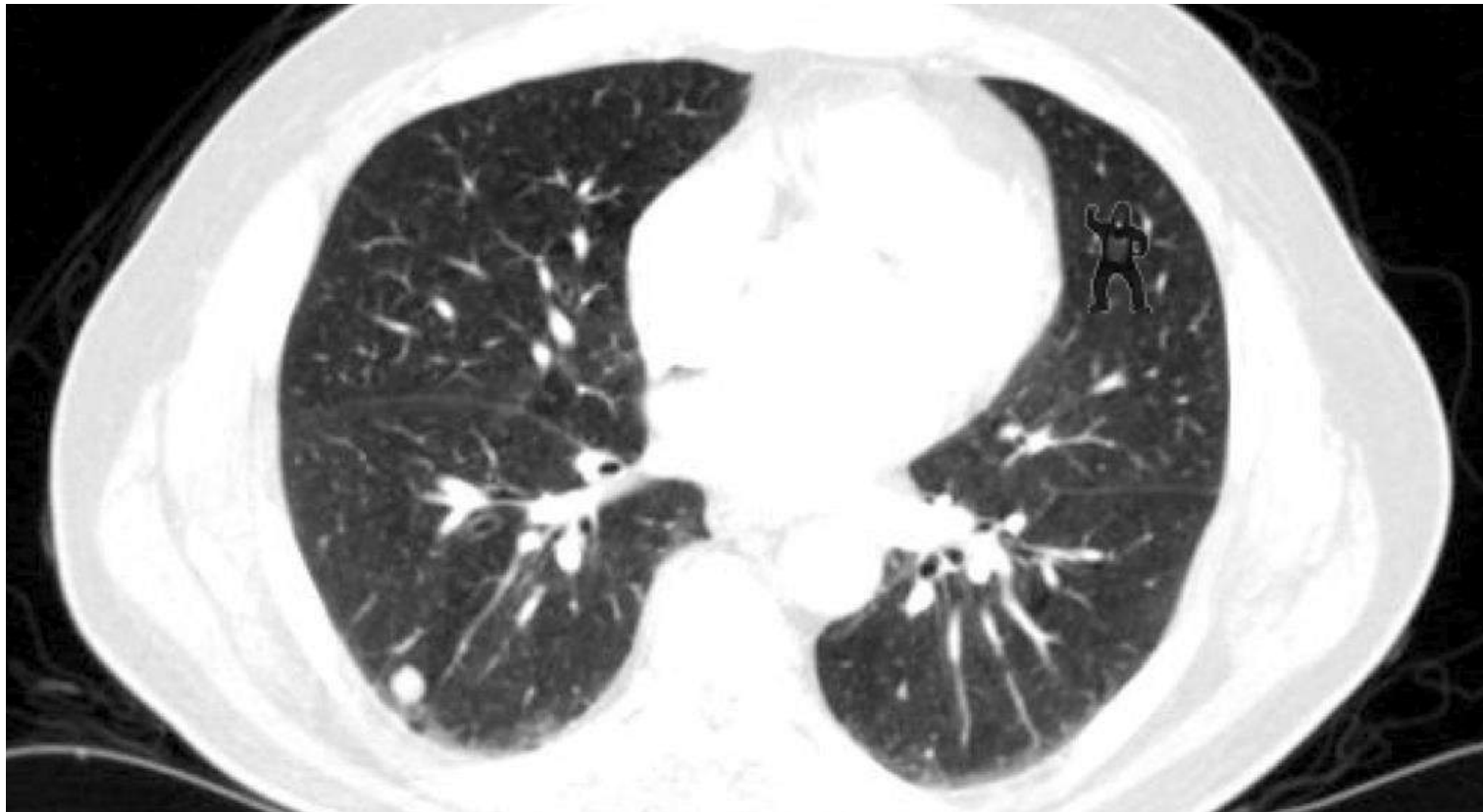


Sonke, J., & Pesata, V. (2015). The arts and health messaging: Exploring the evidence and lessons from the 2014 Ebola outbreak. *BMI Outcomes*, 1, 36-41.

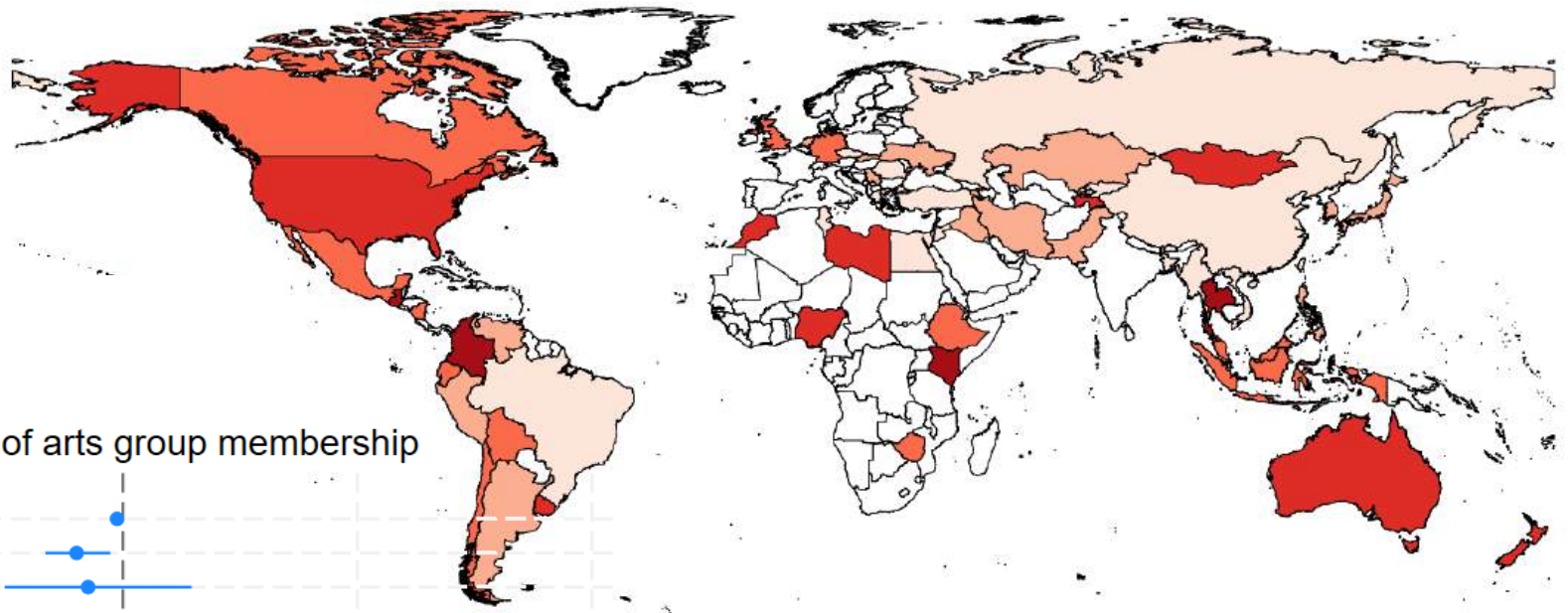
Arts in clinical training

Lung nodule detection task ↓

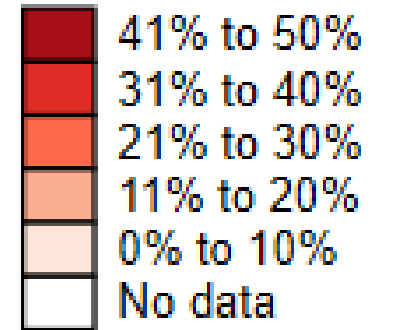
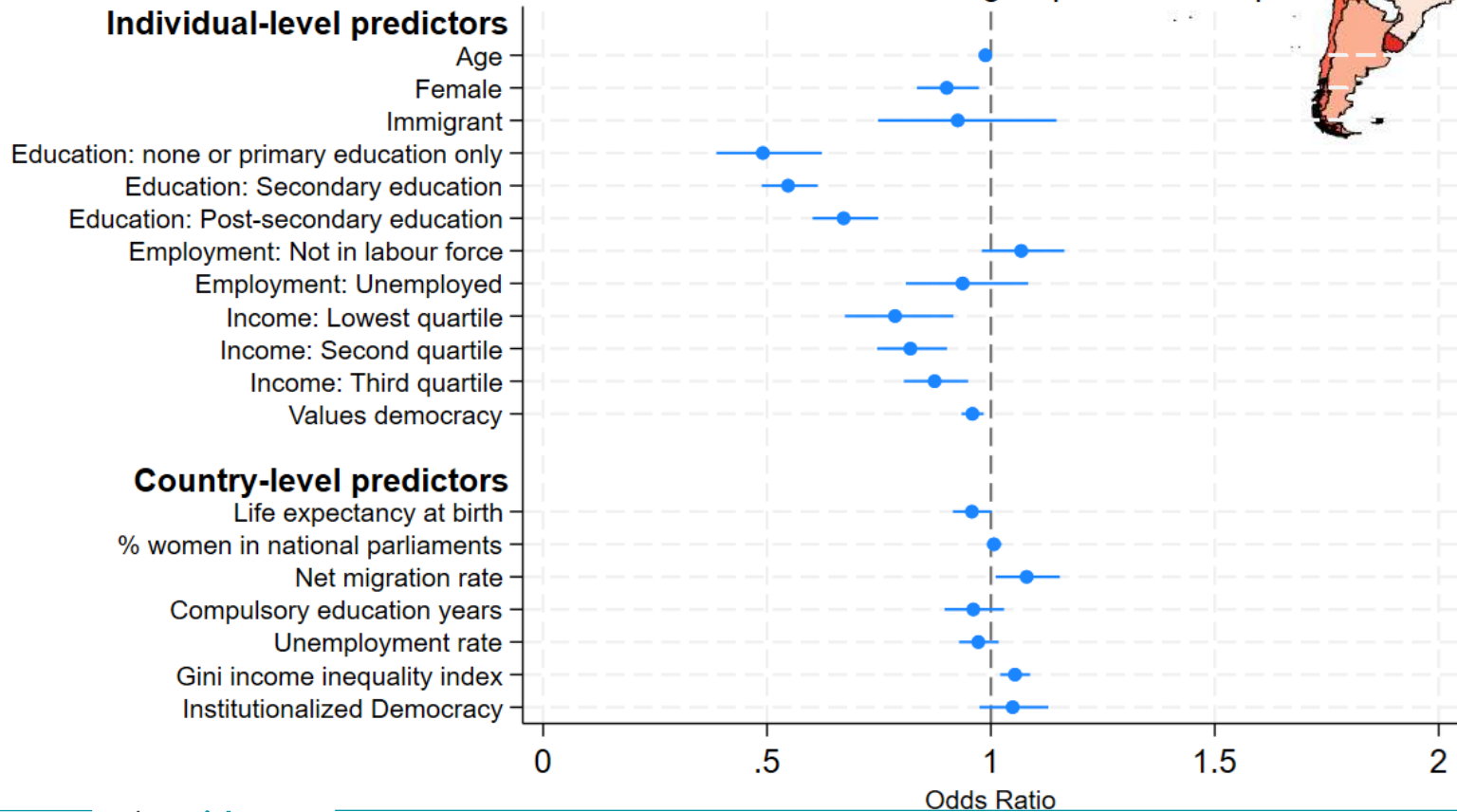
Arts appreciation training →



Arts behaviours

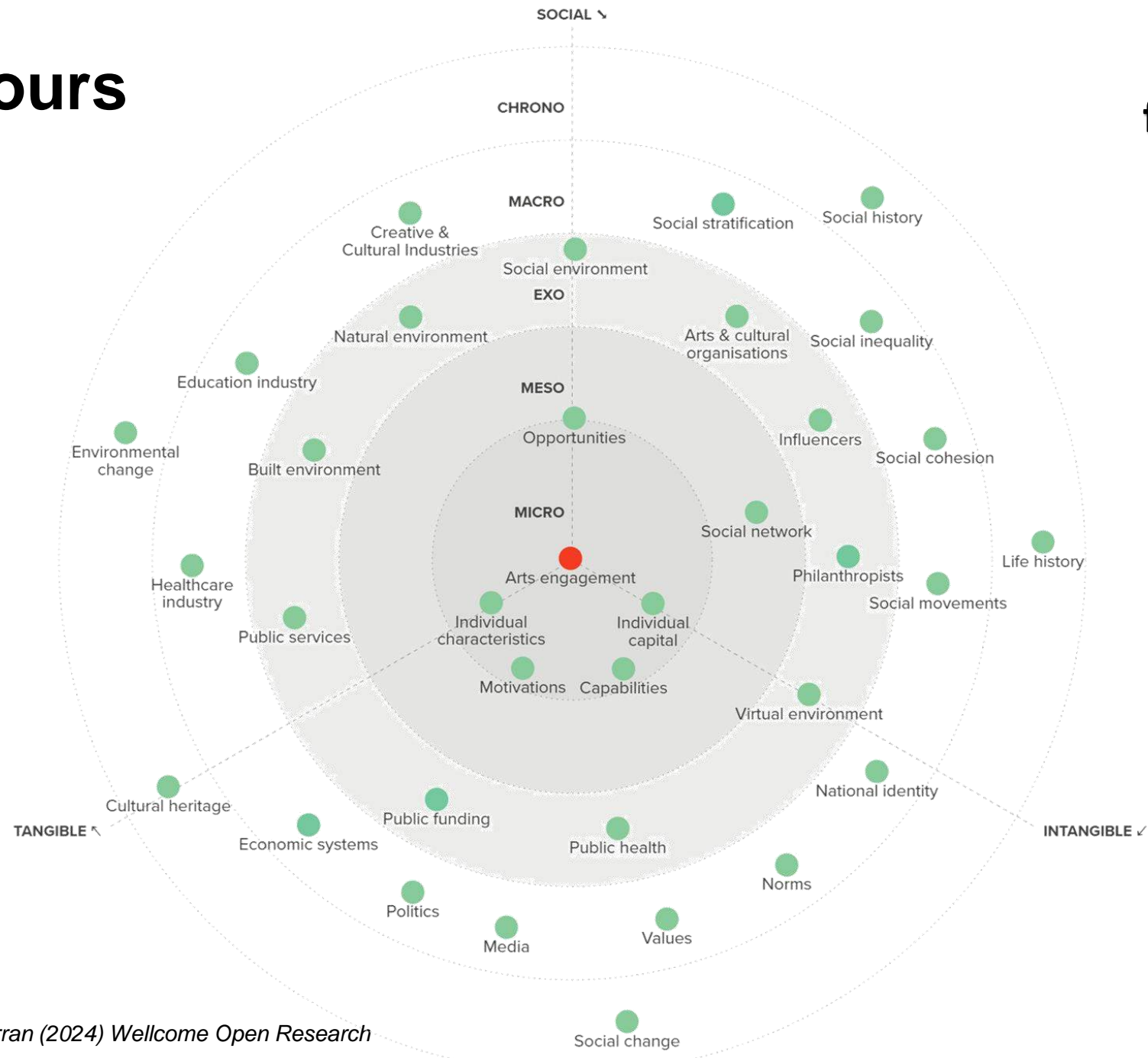


Predictors of arts group membership

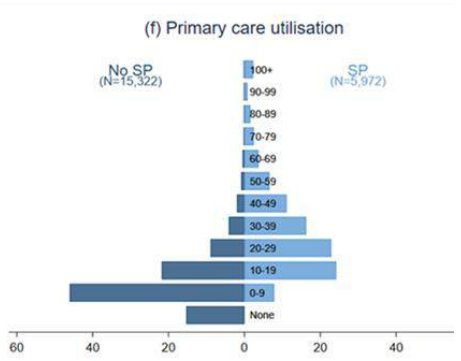
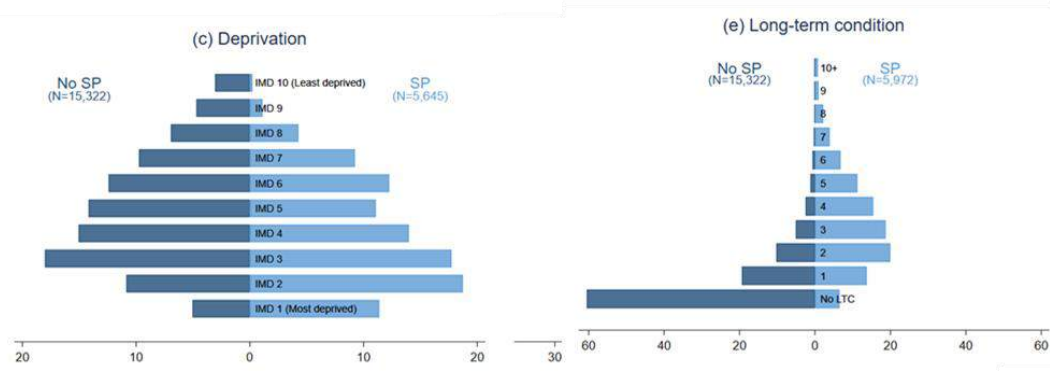


Arts behaviours

RADIANCE framework

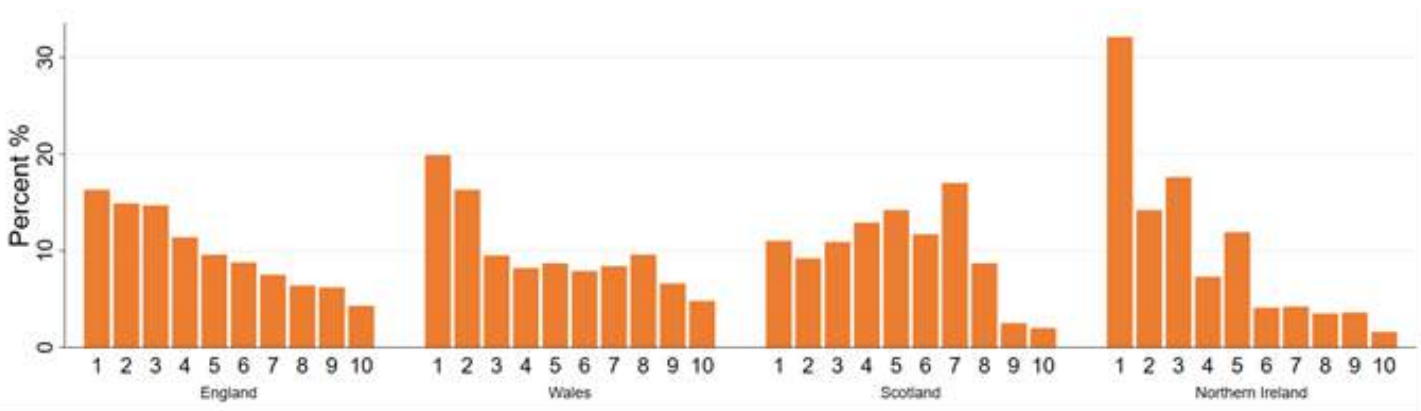


Social Prescribing



↑ N=19,000 in NW London GP records

Linked cross-sector referrals
 ↓ N=160,128 across the UK



Health service utilisation

Model	Estimate (95% CI) (n = 8635) ^a									
	Inpatient care			Outpatient care			Community health care			
	Hospital stay, OR	Length of hospital stay, IRR	Readmission to hospital, OR	Outpatient surgery, OR	Physician visit, OR	No. of physician visits, IRR	Dental care, OR	Home health care, OR	Nursing home stay, OR	Nights in nursing home, IRR
Overall creative engagement (cross-sectional)										
Model 2 ^d	0.92 (0.83-1.02)	0.87 (0.74-0.99)	0.84 (0.72-0.97)	1.19 (1.07-1.33)	1.00 (0.84-1.19)	0.97 (0.90-1.05)	1.13 (1.02-1.26)	0.81 (0.69-0.96)	0.49 (0.38-0.65)	0.34 (0.22-0.54)
Patterns of creative engagement over time (longitudinal over 4 years)										
Increased engagement	1.02 (0.73-1.42)	0.93 (0.56-1.53)	0.98 (0.60-1.61)	0.78 (0.52-1.19)	0.91 (0.52-1.57)	0.92 (0.79-1.07)	1.20 (0.86-1.68)	0.98 (0.61-1.56)	0.95 (0.43-2.12)	2.82 (0.67-11.83)
Decreased engagement	1.44 (1.11-1.86)	1.23 (0.90-1.67)	1.34 (0.96-1.89)	0.60 (0.43-0.83)	0.60 (0.40-0.89)	1.02 (0.85-1.22)	0.64 (0.49-0.84)	1.29 (0.95-1.77)	1.78 (1.23-2.57)	1.61 (0.71-3.64)
Consistent nonparticipation	0.90 (0.61-1.31)	1.10 (0.71-1.71)	1.31 (0.80-2.13)	0.90 (0.56-1.45)	0.49 (0.29-0.83)	1.22 (0.83-1.79)	0.96 (0.65-1.41)	1.29 (0.78-2.12)	1.52 (0.78-2.98)	5.11 (1.07-24.37)

£3.42



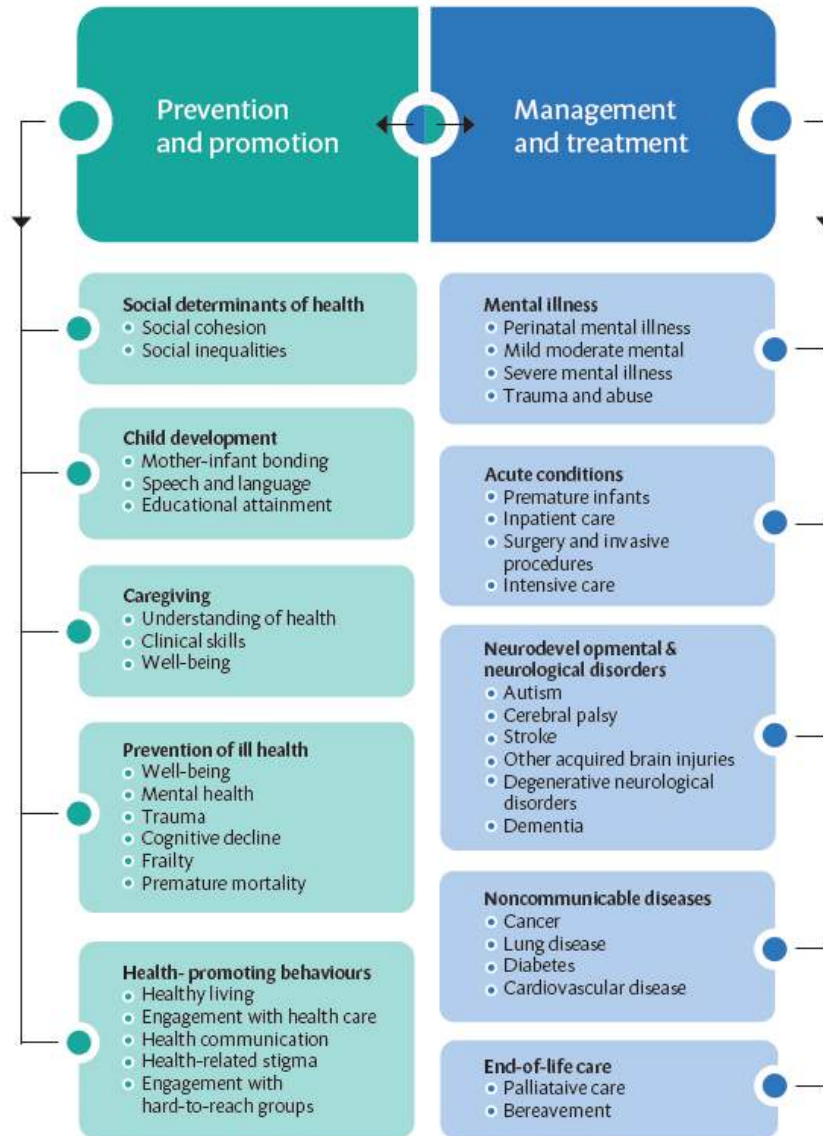
Arts, crafts, creative hobbies, gardening, baking, cooking

Monetary value 

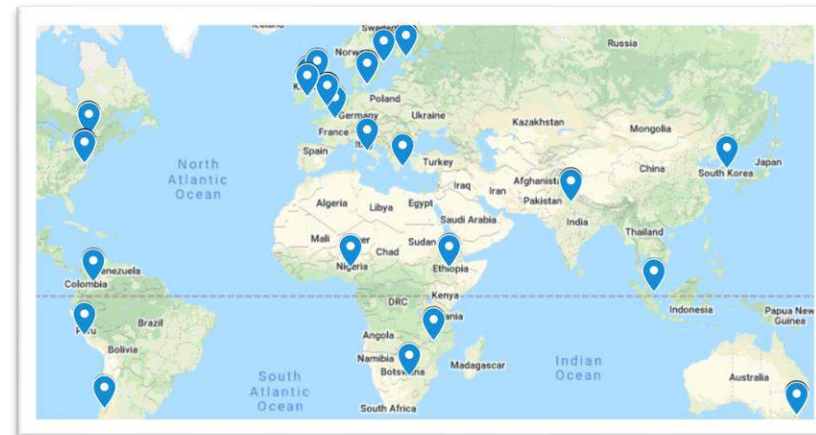


*** REPORT COMING AUTUMN 2024 ***

WHO Report on Arts & Health



- Downloaded >200,000 times (4th most downloaded WHO publication ever)
- Translated into multiple languages
- Led to specific arts-health policies in 8 countries
- Led to new reports from UNESCO, OECD & European Commission
- Named the Global Aesthetic Achievement of 2019
- UCL-SBB designated WHO Collaborating Centre
- UCL-SBB identified 172 arts-health policy reports globally
- WHO-Jameel Arts Health Lab launched (\$5 million investment)
- New WHO Technical Report underway
- Plans for a WHO Technical Briefing and WHO Technical Resolution



The arts in public health policy: progress and opportunities

Rebekah Datta¹, Katy Warren², Pilar Estrada, Tracy Fancourt

There is a growing body of evidence indicating the arts have a role to play in promoting good health and preventing and managing illness. WHO has called for governments to take an intersectoral approach, both within and across traditional areas of policy, to realise the potential of the arts for public health. To explore what global progress is being made towards this aim, we present examples of arts and health policy development from diverse government areas: health, arts, local governments, and cross government. These examples, which have been selected from a scoping review of 172 relevant global policy documents, indicate that many health and arts policy makers view the relationship between arts engagement and improved health in quite general terms, although some are investing in more targeted applications of the arts to address specific public health issues. The most promising and concrete commitments are happening when health and arts ministries or agencies work together on policy development.

Introduction

Over the past decade, there has been increasing interest from researchers, health practitioners, artists, and policy makers in the role of the arts in addressing some of our most pressing public health challenges. In 2019, WHO's Health Evidence Network released a landmark scoping review of over 3000 research studies that explore the effect of the arts (including participating in performing arts, visual arts, and literature and engaging with culture

pathways between the arts, health and social care can provide creative solutions to help to achieve the Health 2030 targets and the Sustainable Development Goals¹. WHO recommends that action is targeted towards ensuring equity of access to arts and culture; training for health and arts practitioners; and identifying specific public health areas for collaboration.²

However, it is unclear what progress is being made towards these goals globally. In this Health Policy, we

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ARTS IN HEALTH
Designing and Researching Interventions

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the social
biobehavioural
research group



The Impact of Arts and Cultural Engagement on Population Health

Findings from Major Cohort Studies in the UK and USA
2017 – 2022



PENGUIN
BOOKS

New book

Coming early
2026



The health benefits of arts & cultural engagement: zooming from psychobiological mechanisms to population-level effects

Prof Daisy Fancourt

Professor of Psychobiology & Epidemiology

Head, Social Biobehavioural Research Group, UCL

Director, WHO Collaborating Centre on Arts & Health

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