#P2246

Quality of Life Across Neurodegenerative and Major Depressive Disorders

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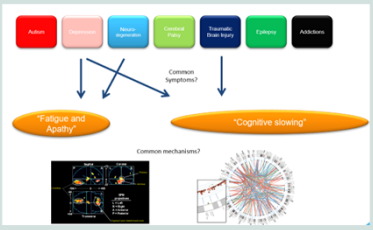
A shared data management platform facilitates pooling of data across disorders and connecting projects to provide new insights

SCAN ME

INTRODUCTION

Establishment of common data elements (CDEs) within large scale research studies is a critical step toward enabling consistency in data collection and optimizing the ability of investigators to analyze pooled participant-level data across brain disorders.



CDEs are supported in large scale research programs, including the Brain-CODE (1,2) and Pilot Platforms (www.indocsystems.com). In the present study, CDEs from the Ontario Brain Institute's Integrated Discovery Program (3) were pooled across studies to better understand quality of life in major depressive and neurological disorders.

METHODS

The present study used de-identified, consented data collected by the Ontario Neurodegenerative Disease Research Initiative (ONDRI) (4) and Canadian Biomarker Integration Network in Depression (CAN-BIND) (5). Data included standardized demographic information, WHO-QoL-BREF (World Health Organization Quality-of-Life Scale), QIDS-SR (Quick Inventory of Depressive Symptomatology Self-Report) and GAD-7 (Generalized Anxiety Disorder 7) assessments in Alzheimer's disease or mild cognitive impairment (AD/MCI, n = 126), amyotrophic lateral sclerosis (ALS, n = 40), cerebrovascular disease (CVD, n = 161), frontotemporal dementia (FTD, n = 53) and Parkinson's disease (PD, n = 140), major depressive disorder (MDD), as well as age-matched healthy controls (n=157). These data were collected and stored on Brain-CODE (www.braincode.ca). ANOVA was used to compare WHO-QoL-BREF scores across cohorts, followed by linear regression models to examine the influence of comorbid depression.

RESULTS

All WHO-QoL-BREF domain scores for the MDD cohort were significantly worse than healthy controls and all ND cohorts (all $p < 0.05$). For the NDD cohorts, Physical QoL was significantly lower than controls for ALS (61.18+20.26), FTD (73.64+19.88), PD (66.50+16.31) (all $p<0.05$), but not AD/MCI (80.50+14.32, $p=0.97$) and CVD (75.97+15.57, $p=0.088$). Linear regression found an association between depression, anxiety and QoL. Both the QIDS and GAD-7 were significant predictors of QoL, with higher QIDS and GAD-7 scores contributing to decreased Physical (B=-0.45 and -0.17, respectively), Psychological (B=-0.45 and -0.27, respectively), Social (B=-0.25 and -0.17, respectively) and Environmental (B=-0.26 and -0.19, respectively) QoL (all $p<0.01$). Differences were noted across ND cohorts.

CONCLUSIONS

The present study highlights the negative impact of depression on QoL [6]. Interestingly, physical QoL was rated better in the ALS and PD cohorts than MDD, despite the physical challenges experienced (i.e., the disability paradox) [7]. These findings also demonstrate the value shared data management platforms to support cross-disease research and CDEs.

REFERENCES

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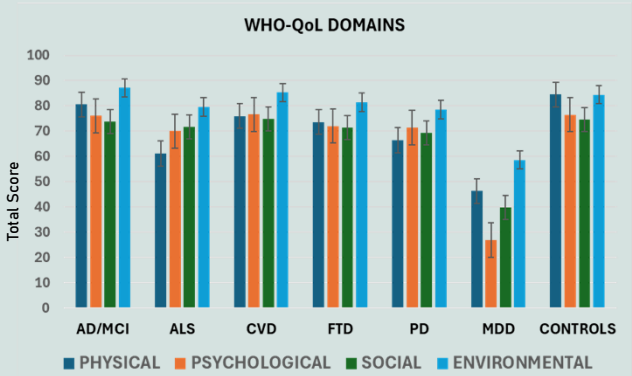
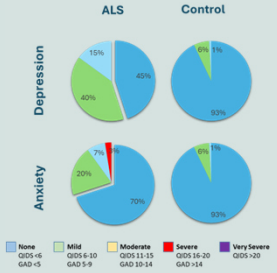
QoL in neurodegenerative disease and MDD: Disability paradox vs negative cognitive bias?



Depression is a mediator of QoL in neurodegenerative disease



PHYSICAL HEALTH

VARIABLE	AD/MCI B	AD/MCI R^2_{change}	ALS B	ALS R^2_{change}	CVD B	CVD R^2_{change}	FTD B	FTD R^2_{change}	PD B	PD R^2_{change}
1. Age	0.02	0.03	0.07	0.05	0.06	0.09**	-0.06	0.06	0.02	008*
Sex	0.00		-0.02		-0.12		0.18		-0.07	
Education	0.13		0.05		-0.02		-0.04		-0.18**	
2. QIDS-SR	-0.32**	0.20**	-0.60**	0.45**	-0.69**	0.29**	-0.24	0.24**	-0.50**	0.32**
GAD-7	-0.18		-0.18		-0.12		-0.38**		-0.12	

PSYCHOLOGICAL HEALTH

VARIABLE	AD/MCI B	AD/MCI R^2_{change}	ALS B	ALS R^2_{change}	CVD B	CVD R^2_{change}	FTD B	FTD R^2_{change}	PD B	PD R^2_{change}
1. Age	0.01	0.01	0.09	0.06	-0.03	0.08**	0.02	0.04	0.01	0.04
Sex	0.01		0.26*		-0.15*		0.05		0.04	
Education	0.03		0.02		-0.08		0.02		0.02	
2. QIDS-SR	-0.27**	0.27**	-0.94**	0.66**	-0.43**	0.40**	-0.36**	0.39**	-0.47**	0.38**
GAD-7	-0.31**		0.06		-0.27**		-0.44**		-0.24**	

SOCIAL RELATIONSHIPS

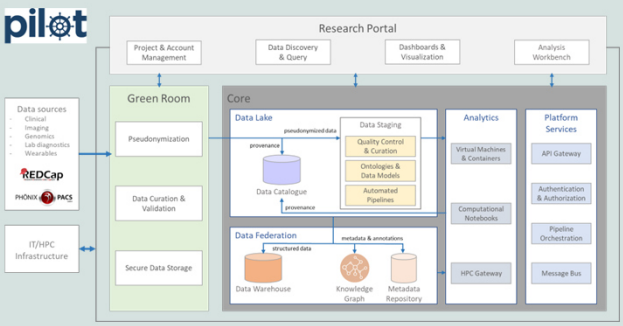
VARIABLE	AD/MCI B	AD/MCI R^2_{change}	ALS B	ALS R^2_{change}	CVD B	CVD R^2_{change}	FTD B	FTD R^2_{change}	PD B	PD R^2_{change}
1. Age	0.90	0.06	0.15	0.13	-0.01	0.02	0.09	0.16*	0.09	0.08*
Sex	0.24**		0.33*		-0.05		0.26*		0.17*	
Education	0.10		0.11		0.04		-0.28*		-0.07	
2. QIDS-SR	0.00	0.51*	-0.24	0.18*	-0.33**	0.17**	0.01	0.19**	-0.48**	0.19**
GAD-7	-0.23*		-0.25		-0.14		-0.45**		0.04	

ENVIRONMENTAL HEALTH

VARIABLE	AD/MCI B	AD/MCI R^2_{change}	ALS B	ALS R^2_{change}	CVD B	CVD R^2_{change}	FTD B	FTD R^2_{change}	PD B	PD R^2_{change}
1. Age	0.08	0.10**	0.11	0.01	0.06	0.10**	-0.01	0.06	0.07	0.03
Sex	0.12		0.17		-0.17*		0.19		-0.02	
Education	0.29**		-0.02		0.05		-0.08		0.06	
2. QIDS-SR	-0.07	0.02	-0.60*	0.40**	-0.33**	0.17**	-0.02	0.15*	-0.36**	0.22**
GAD-7	-0.10		-0.13		-0.15		-0.29**		-0.18	

*p<0.05; **p<0.001

Pilot: Platform for Data Integration and sharing



The authors declare no conflict on interest.

Contact us if you would like to learn more about data platforms

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