

Relationship between pre-morbid personality traits and behavioural and psychological symptoms (BPS) in patients with beginning Alzheimer's disease

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Introduction

Alzheimer's disease (AD) is often accompanied by behavioural and psychological symptoms (BPS) and personality changes. BPS in people with AD is commonly seen as a consequence of brain damage. However, this level of explanation often ignores both the individual experience of the demented and their socio-cultural context. Studying AD phenomenology as resulting from interactions between neurological, psychological and social factors receives increasing attention and so does the potential influence of personality on BPS. Indeed, individual personality structure may both influence the experience of AD and be causal to the occurrence of BPS. We wished to explore the relationship between both premorbid personality and its changes over 5 years and BPS in patients with beginning AD.

Materials and Method

Participants

54 patients (39 female and 15 male) diagnosed with beginning AD between 56 and 89 years of age (*mean age* = 76.9, *SD* = 8.5) and 64 healthy control subjects (35 female and 29 male) aged 56 to 91 years (*mean age* = 69.3, *SD* = 8.7).

Instruments

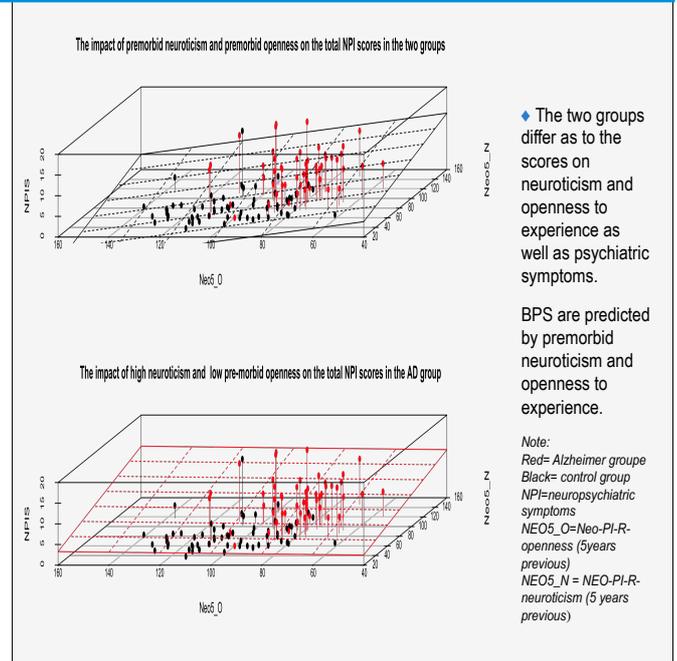
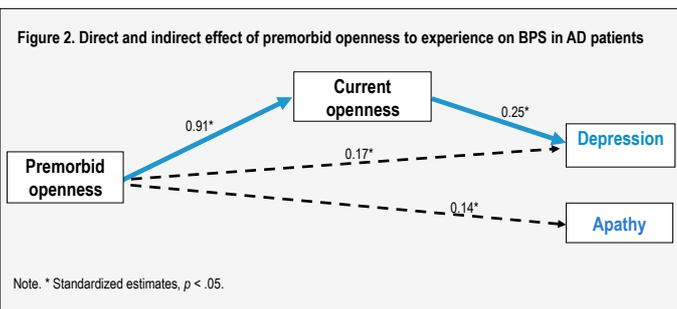
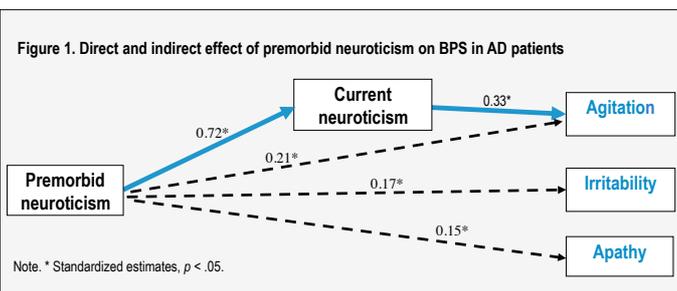
All subjects described their current affective state using the Hospital Anxiety and Depression scale (HAD). Family members filled in the Neuro-Psychiatric Inventory (NPIQ) to evaluate their proxies' current BPS and the NEO Personality Inventory Revised, Form R (NEO-PI-R) to assess their proxies' current personality traits in comparison to their pre-morbid traits, i.e. those 5 years previous to the estimated beginning of AD, or 5 years earlier for the control subjects.

Statistical analyses

Structural equation modeling, i.e. path analyses were used in order to calculate mediation models. So as to determine whether or not pre-morbid personality traits has an impact either on the evolution of the BPS, we used multinomial logistic regressions. In order to investigate possible links between personality changes and each BPS, the overall and by-domain indices of change were calculated followed by a univariate one-way ANOVA.

Results

◆ Premorbid personality traits have both direct and indirect effects on agitation, irritability, depression, and apathy. The most important personality domains that are associated with BPS are neuroticism and openness to experience. High current neuroticism appears to be a mediator between premorbid neuroticism and agitation (Fig. 1). High premorbid neuroticism modifies the expression of irritability and apathy in the AD group. Low premorbid openness to experience has a direct and indirect impact on depression. (Fig. 2). Additionally, apathy is influenced by low premorbid openness.



◆ Personality changes on neuroticism, extraversion, openness, and conscientiousness during the last 5 years were linked to agitation, depression, anxiety, apathy, irritability, sleep disturbance, and eating disorders ($p < 0.001$). Correlations between personality changes and total NPIQ scores ranged from 0.39 to 0.96 (see Table 1)

Table 1. Correlations between overall changes of personality as well as between changes of personality domains and total NPI scores

	Personality changes	Neuroticism changes	Extraversion changes	Openness changes	Agreeableness changes	Conscientiousness changes
Total NPI scores	.607**	.545**	.490**	.453**	.405**	.615**
Personality changes		.923**	.897**	.838**	.564**	.959**
Neuroticism changes			.808**	.711**	.487**	.841**
Extraversion changes				.771**	.420**	.790**
Openness changes					.396**	.774**
Agreeableness changes						.464**

Correlation is significant at the 0.01 level (2-tailed)

Conclusions

◆ We find evidence for the influence of premorbid personality characteristics on the expression of BPS in patients with beginning AD: higher pre-morbid neuroticism was significantly associated with agitation, irritability, and apathy, and low pre-morbid openness was significantly linked with depression and apathy.

◆ Specific BPS can be predicted by premorbid personality features.

◆ Personality changes and BPS seem to occur in parallel.

References

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