Does rigidity distinguish DSM-IV full-threshold and partial Anorexia Nervosa patients?

Thiébaud, M.-R. [1,2], Berthoz, S. [1,3], Lalanne, C. [3], Godart, N. [1,3*]

1 Department of Adolescents and Young Adults Psychiatry, Institut Mutualiste Montsouris, Paris, France
2 Fondation Vallée, Gentilly, France
3 Unité INSERM UMR-SO669, , Université Paris Descartes, Sorbonne Cité et Université Paris Sud 11, France
* **nathalie.godart@imm.fr**

Background

The question whether patients partially meeting DSM-IV criteria for anorexia nervosa (pAN) differ from full-threshold AN is currently debated [1,2,3]. Nowadays, the implication of temperamental and cognitive rigidity (perfectionism, obsessive-compulsive symptoms and poor set-shifting) in the onset and maintenance of AN is emphasized [4,5]. Here we examined if these factors distinguish AN from pAN inpatients.

Methods

A total of 217 female participants (158 AN, mean age 21.1 (6.2) years; 59 pAN; mean age, 19.3 (4.9) years) were recruited from the inpatient treatment facilities for eating disorders of 11 French centres. The patients were evaluated during the first two weeks after their admission. Associations between diagnosis and: age and BMI at admission, illness duration, set-shifting reaction times and errors (Flexibility subtest of the TAP 2.1 [6]), and Eating Attitudes Test (EAT), Hospital Anxiety and Depression scale (HAD), Frost Multidimensional Perfectionism Scale (MPS), Maudsley Obsessive-Compulsive Inventory (MOCI) and Global Outcome Assessment Schedule (GOAS) scores were studied using focused principal component analysis, using pairwise Pearson's correlations between scale scores and their correlation with clinical diagnosis. A multivariate logistic regression analysis was used to assess the relative importance of a subset of these variables, using a bootstrap technique to evaluate model validation and calibration. Regularized regression using the elasticnet criterion was used to screen out relevant predictors from the whole set of explanatory variables, including MPS and EAT subscales. Statistical analysis was done using the R statistical software.

Results

Relative to the pAN, the AN were significantly older (p=0.028, Cohen's d=0.303), had greater EAT total, EAT Dieting and EAT Bulimia scores (respectively p<0.001, d=0.870; p<0.001, d=0.921; p<0.001, d=0.789), as well as greater MPS total, MPS Concern over mistakes and MPS Personal Standards scores (respectively p<0.001, d=0.658; p<0.001, d=0.845; p=0.007, d=0.481).
Focused Principal Component Analysis (Fig. 1) revealed the presence of two main clusters of highly correlated variables, with age, illness duration and set-shifting RT in the first cluster (Pearson's r range, [0.291-0.705]), and MOCI, MPS, and EAT scores in the second cluster ([0.447-0.983]). The EAT, MPS and GOAS scores correlated with clinical diagnosis (r> 0.2).

Table 1. Results from the multivariate logistic regression. Both adjusted and unadjsuted odds-rato (OR) are given for each explanatory variable.

Term	Coefficient	[95% CI]	SE	Z value	p value	OR	[95% CI]	Unadj. OR
Intercept	0.3701	[-4.3972;5.1404]	2.4185	0.15	0.8784			
MPS	0.0294	[0.0041;0.0561]	0.0132	2.23	0.0259	1.030	[1.004;1.057]	1.031
MOCI	-0.0767	[-0.1578;0.0003]	0.0400	-1.92	0.0553	0.926	[0.856;1.002]	1.011
HAD	-0.0418	[-0.1081;0.0212]	0.0328	-1.28	0.2016	0.959	[0.899;1.023]	1.033
Age	0.0527	[-0.0218;0.1374]	0.0401	1.32	0.1885	1.054	[0.974;1.140]	1.101
BMI	-0.2054	[-0.4717;0.0509]	0.1323	-1.55	0.1206	0.814	[0.628;1.055]	0.896
EAT	0.0546	[0.0268;0.0849]	0.0147	3.71	0.0002	1.056	[1.026;1.087]	1.052
SS Errors	0.0015	[-0.0008;0.0038]	0.0012	1.26	0.2064	1.001	[0.999;1.004]	1.001

MPS: Multidimensional Perfectionism Scale; MOCI: Maudsley Obsessive-Compulsive Inventory; HAD: Hospital Anxiety-Depression scale; Age: Age (at inclusion); BMI: Body Mass Index (at inclusion); EAT: Eating Attitude Test; SS Errors: Set-shifting errors number

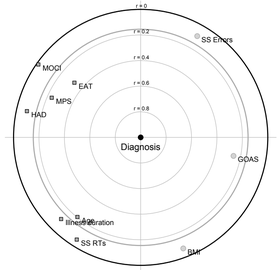

Figure 1. Correlation circle from the focused PCA highlighting positive (square) and negative (circle) correlation between explanatory variables and outcome (AN/pAN).

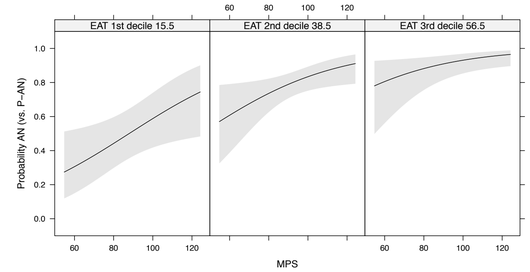

Figure 2. Predicted probabilities of belonging to the AN group as a function of MPS total score and EAT tercile scores. N=176 (129 AN, 47 pAN) complete cases.

Multivariate logistic regression showed that relative to pANs, ANs had greater MPS (OR=1.03, 95% CI [1.003;1.057], p=0.026; Tab. 1) and EAT scores (OR=1.06, [1.026;1.087], p<0.001). The odds-ratio associated to a 25-point increase on the MPS scale was 2.09 (95% CI, [1.09;3.98]; Fig. 2).
Multivariate analyses using penalized regression with these scale scores highlighted the significant contribution of the EAT 'Dieting', EAT 'Bulimia/Food Preoccupation' and MPS 'Concern over mistakes' dimensions (regression coefficients were, respectively: 0.013; 0.018; 0.022).

Conclusions

There was indeed an important prevalence of pANs among this sample of patients admitted to a specialized inpatient unit for an a norectic episode. Yet, pANs had lower perfectionism and eating disorders symptomatology levels. Moreover, irrespective of the latter, patients were twice as likely to be AN for a 25-point increase on the MPS scale (which can range from 29 to 145) in this sample. Though perfectionism is not accounted for in the DSM-IV criteria, this study suggests it might be a critical marker for distinguishing full AN from subthreshold AN. However, to conclude that pANs are less severe cases than AN, prospective studies should be conducted.

References

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