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Parkinson's disease and bilateral subthalamic nuclei deep brain stimulation: beneficial impact of a preoperative cognitive restructuration therapy on postoperative social adjustment.

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Key words: cognitive restructuration, Parkinson's disease, social adjustment, subthalamic nucleus deep brain stimulation.

## **Abstract**

Background: Bilateral subthalamic nucleus deep brain stimulation improves motor symptoms and treatment-related complications in patients with Parkinson's disease (PD). However, some patients have trouble adjusting socially after successful neurosurgery partly due to “unrealistic” expectations and psychiatric disorders. Preoperative psychological interventions focusing on these aspects could be beneficial for such patients.

Methods: We compared two psychosocial approaches – one based on cognitive restructuring and the other consisting of two interviews – to a control group without preoperative preparation. All patients underwent a psychometric evaluation 2 months before surgery and then at 3 and 6 months after surgery, focused on social adjustment with the Social adjustment scale–self-report (SAS-SR). The psychiatric profile of the patients was also assessed.

Results: Out of 73 patients initially enrolled, 62 performed the initial inclusion visit (M-2) and the two postoperative visits (M+3, M+6). For these 62 patients, the overall mean age (52% men) was  $59 \pm 6.13$  and mean disease duration was  $9.44 \pm 3.62$  years. No specific differences were observed for social adjustment between the groups or visits (M-2, M+3, M+6), but an interaction was found in the cognitive restructuring group at M+6 for the family dimension of the SAS-SR.

Conclusion: Our results suggest that, even if no overall increase in social adjustment score was observed, PD patients eligible for neurosurgery should undergo preoperative psychosocial therapy to define unrealistic expectations and help them in their psychological restructuring. This type of therapy, complementary to psychoeducation, could represent an opportunity to prevent postoperative deception and social maladjustment.

## Introduction

Bilateral subthalamic nuclei (STN) deep brain stimulation (DBS) is known to greatly improve motor symptoms and dopa-linked dyskinesia, and reduce dosage of dopaminergic treatments in patients with Parkinson's disease (PD) <sup>[1]</sup>. However, many studies report that social adjustment and mental aspects of quality of life (QOL) do not improve after STN DBS. This is true even when the PD patient undergoing STN DBS has been identified as eligible, i.e., they fulfil surgical criteria of dopamine responsiveness, age, and are free of cognitive alteration or psychiatric disorders <sup>[1]</sup>.

Social adaptation<sup>[2]</sup> can be defined as "the interplay between the individual and the environment", i.e. the individual's behaviour in terms of socially-accepted roles: "Social adjustment is a reflection of the patient's interactions with others, satisfactions and performances in roles, which are more likely modified by previous personality, cultural and family expectations". Weissman<sup>[2]</sup> added that the individual's assumed roles are dependent on age and, potentially, on psychopathology. The notion of social adjustment contrasts with QOL, which refers more generally to the consequences of PD on daily living activities.

Various causal hypotheses have been put forward to explain the lack of improvement in postoperative social adjustment and mental QOL in patients with PD, highlighting "unrealistic" expectations following neurosurgery <sup>[3,4,5,6,7]</sup>, a lack of positive anticipation of DBS outcome, and destabilization of the familial structures<sup>[7,8]</sup>. Lin et al. <sup>[9]</sup> explored STN DBS result expectations and related satisfaction, preoperatively and at 6 months and 6 years postoperatively. Firstly, they showed that patients' expectations change over time: preoperative expectations were different than 6 month's postoperative ones, suggesting that patients may adapt expectations to their actual health-status during the postoperative phase, and these expectations seemed to influence the satisfaction of the neurosurgery outcome, particularly in case of unrealistic expectations <sup>[10]</sup>. It seems that the postoperative evolution of motor symptoms severity influences the rank order of symptoms goals, which dynamic was not observed for behavioural goals, less related to postoperative improvements

[11]. Secondly, they proposed that the management of pre and postoperative expectations seems to be fundamental in maintaining optimal PD patients' care, hypothesizing that adjustment of expectations allows patients to remain satisfied of the DBS result in the postoperative phase [9].

However, while this lack of improvement in postoperative social adjustment is now generally recognised, it is rarely taken into account in patients' follow-up and management. Furthermore, although many authors recommend focusing on "unrealistic" expectations for neurosurgery, pre<sup>[5,7,8,12,13,14]</sup> and postoperatively <sup>[9]</sup> non specific psychosocial interventions have been developed to help manage this specific point. It would thus appear necessary to evaluate expectations preoperatively, and include assessment in the routine psychosocial follow-up of patients, to better prepare and support the patients for the changes induced by neurosurgery.

The purpose of this study was to investigate whether a preoperative cognitive restructuring therapy would improve postoperative social adjustment for PD patients undergoing STN DBS. Cognitive restructuring consisted of a discussion about the dysfunctional cognition for the result of the neurosurgery in which the psychologist encouraged the patient to understand that the cognition was distorted and to consider alternative cognitions through various approaches including: decentration (e.g., "Do you think that every neurostimulated patient is able to...?"); managing the degree of belief in the cognition (e.g., "To what extent, on a scale of 0 to 100, do you think that this idea is true?"); or describing the cognition in detail (e.g., "Why do you expect this result?" "How will you reach this goal?" "Do you think you will be able to do this, and why?"). We describe both motor and psychiatric data in our PD population.

## **Patients and methods**

### Design

This was a prospective, controlled, multicentre study (Clinical Research Program, N°IDRCB 2008-A00655-50) which was approved by the local ethics committee (CPP EST III, N° CPP: 08.07.03, first version date: 04/01/2008) and registered on the ClinicalTrials.gov website (NCT02893449). All included patients gave written informed consent. The detailed methodology of our study has been described in a previous paper <sup>[15]</sup>. Briefly, PD patients eligible for bilateral STN DBS after careful selection according to the criteria reported by Benabid et al. <sup>[1]</sup> were randomised through a computer implemented method into three groups at the inclusion visit (M-2): a cognitive restructuring therapy group (CRTG) consisting of two preoperative interviews including a cognitive restructuring method for unrealistic expectations <sup>[16]</sup>; a clinical interview group (CIG) consisting of two non-directive psychiatric interviews; and a control group (CG) without preoperative preparation. Patients had to be capable to understand consent form and to give written consent. Exclusion criteria were PD patients without social protection, or under tutorship or guardianship. All the patients were followed pre- and postoperatively by a neurologist, a neurosurgeon, a psychologist and a psychiatrist. Psychometric questionnaires proposed at inclusion and at the two postoperative visits (at 3 (M+3) and 6 months (M+6) post-surgery) were performed by psychiatrists blinded to the patient group allocation.

### Measurements

All the included patients underwent one preoperative (M-2) and two postoperative (M+3 and M+6) evaluations performed by a trained psychiatrist or psychologist. The patients were assessed for social adjustment by the Social adjustment scale–self-report (SAS-SR <sup>[17]</sup>).

The SAS-SR is a 54-item scale, measuring social adjustment over the two previous weeks through six dimensions: work, social life and leisure, family, children, marital situation, and material situation.

The items are rated on a 0-5 or 0-8 scale, depending on the relevance of the item with an item

scoring 8 inferring an irrelevant question. A higher total or subscale score indicates greater social impairment.

For the psychiatric dimensions, all the patients were assessed for: i. depression by the Montgomery and Arsberg Depression Rating Scale (MADRS) <sup>[18]</sup> with a cut-off score of 15 indicating depression; ii. anxiety by the Hamilton Anxiety Rating Scale (HARS) <sup>[19]</sup> with a score between 6 and 14 indicating minor anxiety and a score over 15 indicating major anxiety; iii. apathy by the Apathy Scale (AS, Starkstein) <sup>[20]</sup> with a cut-off score of 14 evoking apparent apathy; and, iv. for global functioning by the Evaluation of Global Functioning (EGF) <sup>[21]</sup> with a higher score indicating adapted functioning and lower scores altered functioning in the psychological, social and professional life. These psychiatric data are important for the interpretation of social adjustment, indeed, these dimensions could negatively impact social adjustment and the benefit of cognitive restructuration.

Neurologist assessed at each of the three visits the Unified Parkinson's Disease Rating Scale (UPDRS <sup>[22]</sup>), exploring daily living activities (UPDRS II), motor disability (UPDRS III) and treatment side-effects (UPDRS IV). The UPDRS was proposed preoperatively in "ON-medication" condition and postoperatively in "ON-medication, ON-DBS" condition. The medical treatment was recorded for each patient. These medical data are fundamental to consider the effectiveness of STN-DBS, and the link between postoperative motor increasing, decreasing of treatment side-effects and postoperative social adjustment.

### Statistical analysis

All statistical analyses were conducted using the software IBM SPSS V.20.0. (SPSS, Chicago, Illinois, USA). All data are reported as mean  $\pm$  standard deviation. A value of  $p \leq 0.05$  was considered as statistically significant. The means were compared using ANOVA for repeated measurements.

## Results

### Sample

Of the 73 patients enrolled, 62 performed all three visits – the initial inclusion visit (M-2) and the two postoperative visits (M+3, M+6) – these 62 patients were retained for analysis. The overall mean age (52% men) was  $59\pm 6.13$  (Table 1a) and mean disease duration was  $9.44\pm 3.62$  years. Additional data concerning educational level, professional status and marital status are also presented (Table 1b): 55% of the patients had secondary school education, 68% were married, 68% were retired, and 15% were still working at the time of neurosurgery.

### **Table 1a**

### **Table 1b**

### Neurological data

The pre- and postoperative neurological motor scores are presented in Table 2a.

The daily-living activities (UPDRS II) were similar between the three visits:  $8\pm 5.7$  for M-2;  $5.79\pm 3.5$  for M+3;  $6.33\pm 3.9$  for M+6. The motor scores (UPDRS III) improved postoperatively ( $20.99\pm 13.4$  at M-2 and  $15.39\pm 8.6$  at M+3) without reaching significance ( $p=.091$ ). The M+6 UPDRS III was similar to the first postoperative score ( $14.94\pm 8.7$ ). The scores for UPDRS IV decreased significantly ( $p=.001$ ) from baseline (M-2:  $6.98\pm 3.4$ ) to M+3 ( $3.10\pm 2.6$ ) and remained stable at the M+6 visit ( $2.81\pm 1.9$ ).

### **Table 2a**

UPDRS: Unified Parkinson's Disease Rating Scale

Additional data concerning STN-DBS stimulation parameters are presented in Table 2b.

### Psychiatric data

Psychiatric data concerning depression, anxiety, apathy, and global functioning are presented in Table 3. No significant differences were found either between the groups or the visits for depression, anxiety, apathy or global functioning scores. Furthermore, the scores for these items were within the normal values for each group and at all three evaluations.

#### **Table 3**

MADRS: Montgomery and Arsberg Depression Rating Scale; HARS : Hamilton Anxiety Rating Scale; AS : Apathy Scale; EGF : Evaluation of Global Functioning

### Social adjustment

Social adjustment data are presented in Table 4. No significant differences were found between the groups or between the visits (M-2, M+3, M+6) for the SAS-SR total score or subscores. However, a significant interaction effect was found at M+6 between patients from the CRTG and CIG ( $p=.042$ ) for the “family” dimension: the patients from the CIG had higher scores than those in the CRTG, and for CRTG group, the scores decreased progressively between M-2 and M+6. Furthermore, at M+6, the CIG patients presented lower scores than the CRTG patients without reaching significance ( $p=.056$ ).

#### **Table 4**

SAS-SR : Social Adjustment Scale-Self Report

### **Discussion**

It is now well established that STN DBS does not always result in improved social adjustment scores in patients with PD <sup>[4,5,6,7,14]</sup> even in the context of good motor improvement. This has been attributed

to “unrealistic” expectations <sup>[8,12]</sup> that the patients have about the surgery, as well as the impact of non-motor variables such as depression and apathy <sup>[12,23,24,25]</sup>. However, although preoperative preparation is recommended, to our knowledge, no study has attempted to evaluate the interest of preoperative psychosocial preparation focusing on these unrealistic expectations <sup>[12,25]</sup>.

This paper is thus the first to present data concerning the impact of a preoperative cognitive restructuration therapy on social adjustment, compared to clinical interviews and to a control group, in a population of patients meticulously selected for neurosurgery eligibility (i.e., no major depressive disorder, pathological apathy or anxiety).

The concept of “burden of normality” <sup>[26]</sup>, initially developed to support patients following neurosurgery for seizures, has recently been introduced for patients with PD who undergo DBS <sup>[4,5]</sup>. This syndrome highlights the need to adjust after successful surgery when the patient transforms from a “chronically ill” person to a “well” person. This “burden of normality” may also play a role in the limitation of improvement of mental aspects of social maladjustment <sup>[27]</sup>.

Despite a lack of group effect on the SAS-SR, we observed that our patients presented appropriate functioning in social adjustment both pre- and postoperatively. However, in the last postoperative visit (M+6), patients from the CRTG presented better social adjustment in the family dimension than those from the CIG. This could be due to the fact that cognitive restructuring helped patients to accept the family roles, that the perception of these roles remains unchanged compared to the preoperative period, or that the role is modified according to the new health status of the patient. This is an important data, considering that more than 70% of our sample lives as a couple.

During the preoperative cognitive restructuration therapy, cognitions from different spheres of life (social roles, family roles, marital relationship, professional situation and leisure activities) were assessed according to the Heidelberg Structure-formation-technique <sup>[15,16]</sup>. The cognitions were written down and organised into three dimensions corresponding to the patient’s perceived life before PD, the perceived life with PD and the expected life after neurosurgery. Cognitive

restructuring then focused on dysfunctional cognitions concerning the patient's social role, and more specifically on their preoperative social position with PD, and their postoperative social role expectations with PD. During this restructuring phase, the patients were progressively made aware of the fact that even if neurostimulation improves their motor symptoms, it is unlikely that their environment will necessarily change or that they will find themselves back in the same state as many years ago before the onset of major motor limitations and before the familial-social-professional structures were disrupted by PD. In other words, the patients from the CRTG were brought to the understanding that, after neurosurgery, they will return to their preoperative environment as neurostimulated patients.

Concerning social adjustment as measured by the SAS-SR, we did not observe any group effect either on the global scale score or the subscale score. However, this does not necessarily mean that our preoperative therapy did not have any impact on social adaptation variables. On one hand, we only considered patients for neurosurgery who were free from major depressive disorder, major apathy and invalidating anxiety. Furthermore, they presented globally realistic expectations about the outcome of the neurosurgery, i.e., adapted behaviour in terms of social adjustment at the SAS-SR. We can therefore imagine that even if the patients had a specific "dysfunctional" cognition about the surgery, this may have been modulated through the preoperative visit and psychoeducation, but not necessarily confirmed through more adapted behaviours of social adjustment, which were fully adapted at baseline.

On the other hand, the SAS-SR is constructed for participants to complete only the items corresponding to their situation, for example, single patients without children and out of work do not complete the subscales entitled "marital relation", "interaction with children", or "work". Therefore, even if the whole sample completed the SAS-SR, not all the subscales were completed by each participant. Consequently, our sample may have been underpowered to demonstrate the impact of

our cognitive restructuration therapy on social adjustment. This lack of data concerning specific subscales may also have had an impact on statistics.

It has been suggested that a multidisciplinary education of patients confronted to unrealistic expectations of the result of neurosurgery and adapted to its individual problematic could improve postoperative efficiency <sup>[10,28]</sup> and patient's satisfaction. In line with this and with previous hypothesis <sup>[29]</sup>, our results suggest that it could be important that psychoeducation associated with preoperative cognitive restructuration therapy focusing on expectations could be included for all patients with PD undergoing neurosurgery.

One of the strengths of our study is the blinded methodology: the neurologists, psychologists and psychiatrists were blinded as to the patient groups for the pre- and postoperative psychometric evaluation. However, some limitations are apparent. As mentioned above, our sample was relatively small which may have modulated the statistical effect of the impact of the preoperative cognitive restructuration therapy on social adjustment dimensions. The follow-up period of 6 months is also limited and it is possible that greater improvement in the social adjustment dimensions emerge over time as patients adjust to their new situation, as described by Lin et al. <sup>[9]</sup>.

## **Conclusion**

The specific or « unrealistic » expectations of patients with PD following STN DBS have been well identified in recent literature. We present here the first data concerning preoperative cognitive restructuration therapy to improve non-motor aspects such as social adjustment in the context of PD neurosurgery. While our results do not present an increase in overall social maladjustment scores but only in the family sphere, they contribute to support the idea that it could be important that preoperative cognitive restructuration therapy focusing on patient' specific expectations be included for all patients with PD undergoing neurosurgery, and maybe associated with psychoeducation. This

approach could be effective even in the context of brief therapies (as in our methodology) which are easily adaptable to patient management in a hospital setting, constituting a suggestion for future research.

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**Table 1a: Patient demographic data**

	Mean	Standard deviation
<b>n</b>	62	
<b>Age (years)</b>	59	6.13
<b>Disease duration (years)</b>	9.44	3.62

**Table 1b: Additional patient demographic data**

		n	percentage (%)
<b>Gender</b>	male	38	52%
	female	35	48%
<b>Educational Level</b>	no school	2	3%
	primar	11	15%
	secondar	40	55%
	superior	20	27%
<b>Social status</b>	single	10	14%
	married	50	68%
	widowed	2	3%
	living together	6	8%
	divorced	8	11%
<b>Professional status</b>	working	11	15%
	active pensioner	25	34%
	inactive pensioner	25	34%
	invalidity	10	14%
	sick leave	2	3%

**Table 2a: Neurological data for the patients**

	Group	n	Preoperative evaluation (M-2)		Postoperative evaluation (M+3)		Postoperative evaluation (M+6)		Group Effect	Time Effect
			Mean	SD	Mean	SD	Mean	SD		
<b>Daily levodopa equivalent dose (mg)</b>	CRTG	21	1192.50	471.08	839.07	371.78	811.57	385.11	ns	.000
	CIG	20	1279.10	623.42	791.21	425.27	707.59	370.71	ns	.000
	CG	21	1322.55	377.14	706.23	433.14	699.43	406.79	ns	.000
	total	64	1264.27	491.58	778.45	407.81	740.53	385.66	ns	.000
<b>UPDRS II</b>	CRTG	14	7.64	5.27	6.14	3.46	7.29	5.12	ns	ns
	CIG	13	6.62	6.46	6.47	4.01	5.38	3.43	ns	ns
	CG	16	9.44	5.33	4.94	3.21	6.25	3.15	ns	ns
	total	43	8.00	5.66	5.79	3.53	6.33	3.95	ns	ns
<b>UPDRS III</b>	CRTG	14	21.07	12.80	16.32	9.34	17.93	9.78	ns	ns
	CIG	15	19.23	15.67	15.90	8.04	12.53	8.16	ns	ns
	CG	18	22.39	12.36	14.25	8.84	14.61	8.15	ns	ns
	total	47	20.99	13.39	15.39	8.60	14.94	8.75	ns	ns
<b>UPDRS IV</b>	CRTG	14	7.36	2.34	2.79	1.67	2.21	1.53	ns	ns
	CIG	13	6.77	4.23	3.54	2.14	3.46	1.85	ns	ns
	CG	15	6.80	3.59	3.00	3.66	2.80	2.33	ns	ns
	total	42	6.98	3.38	3.10	2.63	2.81	1.97	ns	.001

UPDRS: Unified Parkinson's Disease Rating Scale

**Table 2b: STNDBS stimulation parameters data concerning PD patients**

Stimulation parameters	Group	Postoperative evaluation (M+3)		Postoperative evaluation (M+6)		Time Effect
		means	SD	means	SD	
<b>Right frequency (Hz)</b>	1	131,59	13,04	131,59	13,04	ns
	2	132,75	9,39	132,75	9,39	ns
	3	117,86	31,57	121,43	26,51	ns
	total	127,38	21,27	128,57	18,37	ns
<b>Right pulse-width (µS)</b>	1	61,43	6,55	58,57	14,93	ns
	2	63	9,23	63	9,23	ns
	3	62,86	13,09	61,43	6,55	ns
	total	62,42	9,87	60,97	10,82	ns
<b>Right voltage (V)</b>	1	2,21	0,87	2,45	0,67	ns
	2	2,26	0,73	2,6	0,69	ns
	3	2,22	0,67	2,82	0,78	ns
	total	2,23	0,75	2,62	0,72	.000
<b>Left frequency (Hz)</b>	1	131,67	13,35	134,29	17,7	ns
	2	130,75	3,35	130,75	3,35	ns
	3	117,86	31,57	121,43	26,51	ns
	total	126,69	20,72	128,79	19,16	ns
<b>Left pulse-width (µS)</b>	1	62,86	9,02	61,43	6,55	ns
	2	64,5	10,99	65,5	11,46	ns
	3	62,86	13,09	61,43	6,55	ns
	total	63,39	11,01	62,74	8,53	ns
<b>Left voltage (V)</b>	1	2,31	0,97	2,31	0,97	ns
	2	2,31	0,90	2,31	0,90	ns
	3	2,29	0,78	2,29	0,78	ns
	total	2,3	0,87	2,3	0,87	.042

**Table 3: Pre-and postoperative scores for depression, anxiety, apathy and global functioning**

	Group	n	Preoperative evaluation (M-2)		Postoperative evaluation (M+3)		Postoperative evaluation (M+6)		Group Effect	Time Effect
			Mean	SD	Mean	SD	Mean	SD		
<b>MADRS</b>	CRTG	21	8.14	5.28	6.00	6.31	7.19	6.00	ns	ns
	CIG	19	7.47	7.76	5.68	4.75	7.00	6.47	ns	ns
	CG	22	7.00	5.77	5.27	3.44	6.45	7.24	ns	ns
	total	62	7.53	6.22	5.64	4.89	6.87	6.51	ns	ns
<b>HARS</b>	CRTG	21	7.52	4.65	5.38	3.44	6.00	4.59	ns	ns
	CIG	19	8.63	8.46	6.05	3.84	7.00	7.65	ns	ns
	CG	22	6.27	4.90	5.68	4.44	5.32	6.77	ns	ns
	total	62	7.42	6.12	5.69	3.89	6.06	6.36	ns	ns
<b>AS</b>	CRTG	21	11.52	6.34	10.71	7.31	13.9	6.98	ns	ns
	CIG	19	9.47	5.80	10.79	3.73	10.53	6.56	ns	ns
	CG	22	12.45	6.43	12.50	5.03	13.36	5.89	ns	ns
	total	62	11.23	6.24	11.37	5.58	12.68	6.54	ns	ns
<b>EGF</b>	CRTG	21	74.76	12.49	76.48	12.77	76.57	13.18	ns	ns
	CIG	19	78.58	14.28	79.95	11.47	80.47	9.98	ns	ns
	CG	22	80.09	10.40	81.50	9.75	85.09	8.38	ns	ns
	total	62	77.82	12.40	79.32	11.39	80.79	11.11	ns	ns

MADRS: Montgomery and Arsberg Depression Rating Scale;

HARS: Hamilton Anxiety Rating Scale;

AS: Apathy Scale;

EGF: Evaluation of Global Functioning

**Table 4: Pre-and postoperative SAS-SR scores for the 3 patient groups**

SAS-SR	Group	n	Preoperative evaluation (M-2)		Postoperative evaluation (M+3)		Postoperative evaluation (M+6)		Group Effect	Time Effect
			Mean	SD	Mean	SD	Mean	SD		
<b>Total score</b>	CRTG	21	1.51	0.30	1.51	0.39	1.55	0.36	ns	ns
	CIG	19	1.62	0.30	1.65	0.28	1.67	0.37	ns	ns
	CG	22	1.69	0.33	1.55	0.18	1.64	0.45	ns	ns
	total	62	1.61	0.32	1.57	0.30	1.62	0.39	ns	ns
<b>Work</b>	CRTG	11	1.94	0.67	1.76	0.60	1.98	0.68	ns	ns
	CIG	10	1.91	0.65	1.68	0.87	1.45	0.67	ns	ns
	CG	8	2.03	0.66	1.62	0.21	1.58	0.36	ns	ns
	total	29	1.95	0.64	1.69	0.62	1.69	0.63	ns	ns
<b>Social life-leisures</b>	CRTG	21	1.83	0.49	1.86	0.69	2.02	0.86	ns	ns
	CIG	19	1.78	0.46	1.85	0.82	1.77	0.57	ns	ns
	CG	22	1.99	0.68	1.99	0.31	2.08	0.82	ns	ns
	total	62	1.87	0.55	1.90	0.62	1.96	0.77	ns	ns
<b>Family life</b>	CRTG	20	1.62	0.53	1.59	0.59	1.53	0.43	0.42	ns
	CIG	19	1.83	0.46	1.89	0.57	1.89	0.60		ns
	CG	22	1.88	0.56	1.81	0.44	1.78	0.57	ns	ns
	total	61	1.78	0.52	1.76	0.54	1.73	0.55	ns	ns
<b>Interaction with children</b>	CRTG	1	1.50	-	1.25	-	1.00	-	ns	ns
	CIG	4	1.31	0.24	1.25	0.29	1.31	0.47	ns	ns
	CG	11	1.42	0.31	0.98	0.58	1.29	0.82	ns	ns
	total	16	1.39	0.28	1.06	0.50	1.34	0.71	ns	ns
<b>Marital relation</b>	CRTG	15	1.37	0.50	1.26	0.78	1.40	0.54	ns	ns
	CIG	16	1.64	0.73	1.67	0.83	1.63	0.84	ns	ns
	CG	16	1.66	0.52	1.56	0.54	1.75	0.81	ns	ns
	total	47	1.56	0.60	1.50	0.73	1.60	0.75	ns	ns
<b>Material situation</b>	CRTG	21	1.00	0.00	1.05	0.22	1.05	0.22	ns	ns
	CIG	19	1.11	0.32	1.00	0.00	1.26	0.93	ns	ns
	CG	21	1.24	0.54	1.05	0.22	1.14	0.36	ns	ns
	total	61	1.11	0.37	1.03	0.18	1.15	0.57	ns	ns

SAS-SR: Social Adjustment Scale-Self Report