CHAPTER 4
RESULTS

CHAPTER CONTENTS:

A. SUBJECT DATA SUMMARY

A comprehensive description of all the results obtained for each one of the subjects is provided in the Appendix to this chapter (p. 4.35). This part of the work is separated from the rest as it is required as part of an MSc dissertation, but the reader does not necessarily have to read it to follow the study.

In the section to follow (Section A), short descriptions are given for each patient in Part I, and each control in Part II. In this section, the FIQ total score is out of 100 (severely afflicted patients usually obtain a score of 50-70). The symptom score was calculated from responses to the symptoms listed on the Review of Current Symptoms questionnaire. The total number of symptoms with which the subject presented was calculated out of a total of 100 symptoms. SAM-axis function is described in terms of the amount of variability (indicated by the total power in the frequency domain) and the subject's autonomic response to orthostatic stress (HRV should decrease in the standing position). HPA-axis function is reflected in basal cortisol levels (a normal cortisol level for the time the subjects were evaluated would be 4-8 ng/ml). The attachment style of the subjects is described as secure (low anxiety and avoidance), preoccupied (high anxiety, low avoidance), fearful-avoidant (high anxiety, high avoidance) and dismissing-avoidant (low anxiety, high avoidance).

Abbreviations: *FM: fibromyalgia; FIQ: Fibromyalgia Impact Questionnaire; SAM-axis: sympatho-adrenal-medullary stress-axis; HPA-axis: hypothalamic-pituitary-adrenal stress-axis; HRV: heart rate variability; BMI: Body Mass Index.*

I. Short description of each patient

Patient 1

Patient 1 is a 49-year-old female who has been suffering from FM for 31 years. Her symptoms first started to appear after a period of overexertion and major stress. She did not report any traumatic events during childhood (except for suffering from an eating disorder as a young adult). The patient's FIQ total score was 47.33 and symptom score 73. Assessment of the SAM-axis and HPA-axis function showed lowered HRV with a normal autonomic reaction to orthostatic stress (Supine - 232.99 ms^2; Standing – 10.40

ms²) and an elevated basal cortisol level of 11.5 ng/ml. Patient 1 is right-brain orientated and has a fearful-avoidant attachment style.

Patient 2

Patient 2 is a 45-year-old female who has been suffering from FM for 20 years. Her FM complaints started gradually. She reported traumatic school years (she wet her bed from 7 to 19 years of age), and an unfulfilling marriage for the past 26 years as possible triggers for her symptoms. The patient's FIQ total score was 73.34 and symptom score 36. Assessment of the SAM-axis and HPA-axis function indicated a normal autonomic reaction to orthostatic stress (Supine – 589.73 ms²; Standing – 149.60 ms²) and an elevated basal cortisol level of 10.0 ng/ml. Patient 2's preferred thinking style seems to be strongly influenced by the limbic brain function. She shows features characteristic of the dismissing attachment style.

Patient 3

Patient 3 is a 52-year-old female who has been suffering from FM for 25 years. Her symptoms started to appear gradually. As a child, Patient 3 had rheumatic fever. She reported the death of both her parents and husband (later in life) as possible contributing factors in the development of her complaints. The patient's FIQ total score was 74.00 and symptom score 77. Assessment of the SAM-axis and HPA-axis function showed marked lowered HRV (Supine – 53.11 ms²; Standing – discarded) and an elevated basal cortisol level of 10.5 ng/ml. Patient 3 gave a right-brain profile on testing and has a preoccupied attachment style.

Patient 4

Patient 4 is a 21-year-old female who has been suffering from FM for 3 years. Her symptoms started to appear gradually after a period of overexertion and psychological stress. She did not report any traumatic events during childhood (except for the diagnosis of diabetes three years earlier). The patient's FIQ total score was 35.62 and she presented with a total of 28 symptoms. Assessment of the SAM-axis and HPA-axis function showed extremely low HRV with an inability to mount an appropriate autonomic response to orthostatic stress (Supine – 3.38 ms²; Standing – 4.32 ms²) and a basal cortisol level within the normal range (6.5 ng/ml). Patient 4 is right-brain orientated and has a preoccupied attachment style.

Patient 5

Patient 5 is a 35-year-old male who has been suffering from FM for 8 years. His symptoms started to appear gradually. He reported a major traumatic incident at the age of seven. The patient's FIQ total score was 54.19 and he presented with a total of 44 symptoms. Apart from that, this patient does not show the typical profile exhibited by the other patients. Assessment of the SAM-axis and HPA-axis function showed a healthy HRV with a normal autonomic reaction to stress (Supine – 2776.54 ms^2; Standing – 1253.52 ms^2) and a basal cortisol level within the normal range (4.5 ng/ml). Patient 5 seems to be left-brain orientated and has a secure attachment style.

Patient 6

Patient 6 is a 55-year-old female who has been suffering from FM for 41 years. Her symptoms started to appear gradually from the age of 14. She reported being molested (age 4), a miscarriage, unfulfilling marriage and the death of her father as possible contributing factors in the development of her complaints. The patient's FIQ total score was 72.86 and symptom score 70. Assessment of the SAM-axis and HPA-axis function showed markedly low HRV with decreased autonomic reaction to orthostatic stress (Supine – 80.48 ms^2; Standing – 57.78 ms^2) and a basal cortisol level within the normal range (7.5) ng/ml. Patient 6 gave a right-brain profile on testing, together with a strong preference for thinking styles influenced by the left limbic brain function. She shows features characteristic of the dismissing attachment style.

Patient 7

Patient 7 is a 48-year-old female who has been suffering from FM for 28 years. Her symptoms first started to appear after a major psychological stressor. A possible etiological factor in the patient's past is the rheumatic fever she had as a child. The patient's FIQ total score was 74.41 and symptom score 95. Assessment of the SAM-axis and HPA-axis function showed marked lowered HRV with suboptimal autonomic reaction to stress (Supine – 49.39 ms^2; Standing – 18.28 ms^2) and a basal cortisol level within the normal range (6.5 ng/ml). Patient 7's preferred thinking is strongly influenced by the limbic brain function and she has a secure attachment style.

Patient 8

Patient 8 is a 33-year-old female who has been suffering from FM for 12 years. Her symptoms first started following an illness and two great psychological stressors (these occurred in short succession of one another). The patient's FIQ total score was 42.18 and symptom score 33. Assessment of the SAM-axis and HPA-axis function indicated a normal autonomic reaction in response to orthostatic stress (Supine – 602.99 ms^2; Standing – 102.33 ms^2) and an elevated basal cortisol level of 10.5 ng/ml. Patient 8 is right-brain orientated, and also exhibits a strong preference for thinking styles influenced by the left limbic brain function. She has a secure attachment style.

Patient 9

Patient 9 is a 40-year-old male who has been suffering from FM for 5 years. His symptoms first started to appear after a great psychological stressor. Early childhood trauma included an alcoholic father and the death of this parent. In adult life, he experienced his divorce to be especially distressing. The patient's FIQ total score was 87.85 and symptom score 47. Assessment of the SAM-axis and HPA-axis function showed markedly low HRV in the supine bodily position (Supine – 63.18 ms^2; Standing – 195.24 ms^2) and an elevated basal cortisol level of 9.5 ng/ml. Patient 9 gave a right-brain profile on testing, together with a strong preference for thinking styles influenced by the left limbic brain function. He has a preoccupied attachment style.

Patient 10

Patient 10 is a 63-year-old female who has been suffering from FM for 21 years. Her symptoms started to appear gradually. She did not report any traumatic events during childhood, but had a neck fusion at the age of 50. The patient's FIQ total score was 58.04 and symptom score 37. Assessment of the SAM-axis and HPA-axis function showed markly lower HRV in the standing bodily position (Supine – 2408.88 ms^2; Standing – 273.09 ms^2) and an exceptionally high basal cortisol level (16.5 ng/ml). Patient 10 is right-brain orientated, together with a strong preference for thinking styles marked by left cortical processing. She has a secure attachment style.

Patient 11

Patient 11 is a 33-year-old female who has been suffering from FM for 4 years. Her symptoms started to appear gradually. As a child, Patient 11 had polio. Her FIQ total

score was 60.59 and symptom score 35. Assessment of the SAM-axis and HPA-axis function showed markedly lower HRV with suboptimal autonomic reaction to orthostatic stress (Supine – 69.18 ms²; Standing – 33.49 ms²) and an elevated basal cortisol level of 9.0 ng/ml. Patient 11 gave a right-brain profile on testing, together with a strong preference for thinking styles influenced by the left limbic brain function. She shows features characteristic of the dismissing attachment style.

Patient 12

Patient 12 is a 41-year-old female who has been suffering from FM for 15 years. Her symptoms first started to appear after an operation. She reported to have had glandular fever and hepatitis in adult life. She also had an emotionally draining marriage which ended in divorce. The patient's FIQ total score was 58.58 and symptom score 95. Assessment of the SAM-axis and HPA-axis function showed markedly lower HRV with an inability to mount an appropriate autonomic response to orthostatic stress (Supine – 134.62 ms²; Standing – 139.92 ms²) and a basal cortisol level at the higher end of the normal range (8.0 ng/ml). Patient 12 is right-brain orientated, with a strong preference for thinking styles influenced by the left limbic brain function. She has a fearful-avoidant attachment style.

Patient 13

Patient 13 is a 46-year-old female who has been suffering from FM for 10 years. Her symptoms first started to appear following an accident. Patient 13 reported to have had a very stressful, unhappy childhood. The patient's FIQ total score was 53.33 and symptom score 21. Assessment of the SAM-axis and HPA-axis function showed low HRV with an inability to mount an appropriate response to orthostatic stress (Supine – 194.52 ms²; Standing – 191.0 ms²) and an elevated basal cortisol level of 10.0 ng/ml. Patient 13 gave a right-brain profile on testing, together with a strong preference for thinking styles influenced by the left limbic brain function. She shows features characteristic of the fearful-avoidant attachment style.

Patient 14

Patient 14 is a 38-year-old female who has been suffering from FM for 4 years. Her symptoms started to appear gradually. Traumatic incidents in adult life included a miscarriage, a difficult pregnancy, marital problems and a separation from her husband.

The patient's FIQ total score was 40.25 and symptom score 45. Assessment of the SAM-axis and HPA-axis function showed low HRV with suboptimal autonomic response to orthostatic stress (Supine – 231.80 ms²; Standing – 37.46 ms²) and an elevated basal cortisol level of 12.0 ng/ml. Patient 14 is left-brain orientated, with a strong preference for thinking styles influenced by the right limbic brain function. She has a secure attachment style.

Patient 15

Patient 15 is a 53-year-old female who has been suffering from FM for 20 years. Her symptoms started gradually with chronic colds and flues following her father's death. The patient's FIQ total score was 40.76 and symptom score 40. Assessment of the SAM-axis and HPA-axis function showed extremely low HRV with an inability to mount an appropriate autonomic reaction to orthostatic stress (Supine – 22.42 ms²; Standing – 22.15 ms²) and an elevated basal cortisol level of 10.0 ng/ml. Patient 15 seems to be right-brain orientated, together with a very strong preference for thinking styles influenced by the left limbic brain structures. She has a secure attachment style.

Patient 16

Patient 16 is a 52-year-old female who has been suffering from FM for 18 years. Her symptoms first started to appear after an operation and a period of overexertion and major stress. Traumatic early life experiences include her parents' divorce (age 2), being molested (age 4) and the rejection of her biological father. In adult life she lost her eldest son. The patient's FIQ total score was 49.67 and symptom score 58. Assessment of the SAM-axis and HPA-axis function showed markedly low HRV (Supine – 64.70 ms²; Standing – 109.58 ms²) and an elevated basal cortisol level of 12.0 ng/ml. Patient 16 gave a right-brain profile on testing and has a secure attachment style.

II. Short description of each control

Control 1

Control 1 is a 51-year-old, healthy female who has a BMI similar to that of Patient 1. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score and symptom score were 0.0. The control had a relative healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine

– 500.97 ms²; Standing – 87.68 ms²) and a basal cortisol level within the normal range (6.0 ng/ml). Control 1 has a secure attachment style.

Control 2

Control 2 is a 44-year-old, healthy female who has a BMI similar to that of Patient 2. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score and symptom score were 0.0. The control had low HRV with an unusual autonomic response to stress (Supine – 123.43 ms²; Standing – 162.19 ms²) and a basal cortisol level slightly lower than the normal range (2.5 ng/ml). Control 2 has a secure attachment style.

Control 3

Control 3 is a 55-year-old, healthy female who has a BMI similar to that of Patient 3. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 6.05 and she had 2 symptoms. The control had a basal cortisol level within the normal range (4.0 ng/ml). Control 3 has a secure attachment style. This subject's HRV recording was discarded.

Control 4

Control 4 is a 21-year-old, healthy female who has a BMI similar to that of Patient 4. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 0.0 and she presented with 7 symptoms. The control had a relatively healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine – 616.64 ms²; Standing – 87.87 ms²) and a basal cortisol level within the normal range (7.0 ng/ml). Control 4 has a secure attachment style.

Control 5

Control 5 is a 27-year-old, healthy male who has a BMI similar to that of Patient 5. He did not report any traumatic experiences or serious illnesses in his lifetime. The control's FIQ total score was 4.0 and he presented with 3 symptoms. The control had a healthy amount of variability in heart rate with a normal response to orthostatic stress (Supine – 2466.57 ms²; Standing – 1013.74 ms²) and a basal cortisol level within the normal range (5.5 ng/ml). Control 5 has a secure attachment style.

Control 6

Control 6 is a 55-year-old, healthy female who has a BMI similar to that of Patient 6. She reported having had hepatitis as a child and pneumonia as an adult. She also reported to have had a miscarriage. The control's FIQ total score was 0.0 and symptom score 5. The control had a relatively healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine – 529.03 ms^2; Standing – 202.49 ms^2) and a basal cortisol level slightly lower than the normal range (3.0 ng/ml). Control 6 has a secure attachment style.

Control 7

Control 1 is a 55-year-old, healthy female who has a BMI similar to that of Patient 7. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 10.03 and she had one symptom. The control had a basal cortisol level within the normal range (7.5 ng/ml). Control 7 has a secure attachment style. This subject's HRV recording was discarded.

Control 8

Control 8 is a 36-year-old, healthy female who has a BMI similar to that of Patient 8. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 3.63 and she did not present with any symptoms. The control had lowered HRV with an unusual autonomic response to orthostatic stress (Supine – 52.51 ms^2; Standing – 65.03 ms^2) and a basal cortisol level within the normal range (7.5 ng/ml). Control 8 has a secure attachment style.

Control 9

Control 9 is a 31-year-old, healthy male who has a BMI similar to that of Patient 9. He did not report any traumatic experiences or illnesses in his lifetime. The control's FIQ total score was 0.0 and he had three symptoms. The control had a healthy amount of variability in heart rate with an unusual response to orthostatic stress (Supine – 1377.72 ms^2; Standing – 1625.26 ms^2) and a basal cortisol level within the normal range (5.0 ng/ml). Control 9 has a secure attachment style.

Control 10

Control 10 is a 60-year-old, healthy female who has a BMI similar to that of Patient 10. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score and symptom score was 0.0. The control had a relatively healthy amount of variability in heart rate with an unusual response to orthostatic stress (Supine – 339.86 ms^2; Standing – 850.59 ms^2) and a basal cortisol level within the normal range (8.5 ng/ml). Control 10 has a secure attachment style.

Control 11

Control 11 is a 39-year-old, healthy female who has a BMI similar to that of Patient 11. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 0.0 and she had one symptom. The control had a healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine – 1487.19 ms^2; Standing – 1214.5 ms^2) and a basal cortisol level slightly higher than the normal range (9.0 ng/ml). Control 11 has a secure attachment style.

Control 12

Control 12 is a 40-year-old, healthy female who has a BMI similar to that of Patient 12. She reported an accident at 36 years of age. The control's FIQ total score was 28.48 and she presented with 7 symptoms. The control had a basal cortisol level within the normal range (5.5 ng/ml). Control 12 has a secure attachment style. This subject's HRV recording was discarded.

Control 13

Control 13 is a 49-year-old, healthy female who has a BMI similar to that of Patient 13. She did not report any traumatic experiences or serious illnesses in her lifetime. The control's FIQ total score was 11.58 and she presented with a total of 13 symptoms. The control had low HRV with a normal response to orthostatic stress (Supine – 125.62 ms^2; Standing – 92.23 ms^2) and a basal cortisol level slightly lower than the normal range (12.0 ng/ml). Control 13's attachment style was not evaluated.

Control 14

Control 14 is a 39-year-old female who has a BMI similar to that of Patient 14. At the age of 43 this control had a melanoma removed. The control's FIQ total score was 7.0

and she presented with a total of 13 symptoms. The control had a relatively healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine – 359.30 ms²; Standing – 119.34 ms²) and a basal cortisol level within the normal range (8.0 ng/ml). Control 14 has a secure attachment style.

Control 15

Control 15 is a 52-year-old, healthy female who has a BMI similar to that of Patient 15. She did not report any traumatic experiences in her lifetime. The control's FIQ total score was 3.33 and she presented with one symptom. The control had a relative healthy amount of variability in heart rate with a normal autonomic response to orthostatic stress (Supine – 514.49 ms²; Standing – 162.19 ms²) and a basal cortisol level slightly lower than the normal range (3.0 ng/ml). Control 15 has a secure attachment style.

B. DESCRIPTIVE STATISTICS

1. Patient health questionnaire

1.1. Age

Mean age
Patient group: 43.94 yrs (SD 10.46) Youngest patient - 21 yrs, oldest patient – 63 yrs
Control group: 43.20 yrs (SD 11.19) Youngest control - 21 yrs, oldest control – 60 yrs
Statistical difference (Mann-Whitney test): p-value = 0.8898

Age interval classes for subjects

Figure 1.1. Bar graph demonstrating age interval classes for patients. Because controls were age-matched to patients, the same age intervals apply to the controls (thus the age intervals are the same for controls).

1.2. Gender

Patient group (n=16)
Female: 14 (87.5%)
Male: 2 (12.5%)

Control group (n=15)
Female: 13 (86.7%)
Male: 2 (13.3%)

The gender distribution for the two groups did not differ significantly

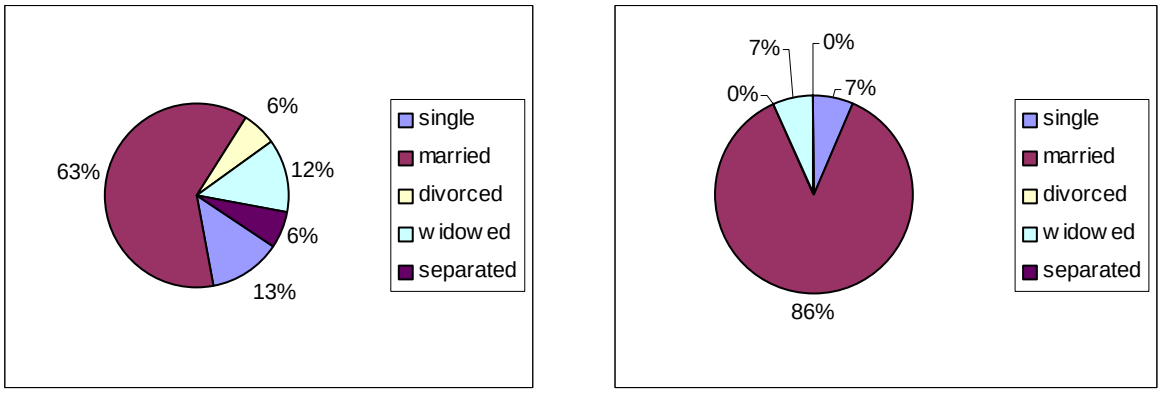
1.3. Body Mass Index (BMI)

Patient group (n=16)
Mean: 25.84 (SD 4.53)

Control group (n=15)
Mean: 24.64 (SD 3.18)

Statistical difference (Mann-Whitney test): p = 0.5015 (non-significant)

1.4. Marital status



A **B**

Figure 1.4. Pie graph demonstrating the marital status of subjects. **A**: Marital status of patients **B**: Marital status of controls (in these graphs 'single' refers to never married)

1.5. Highest qualification obtained

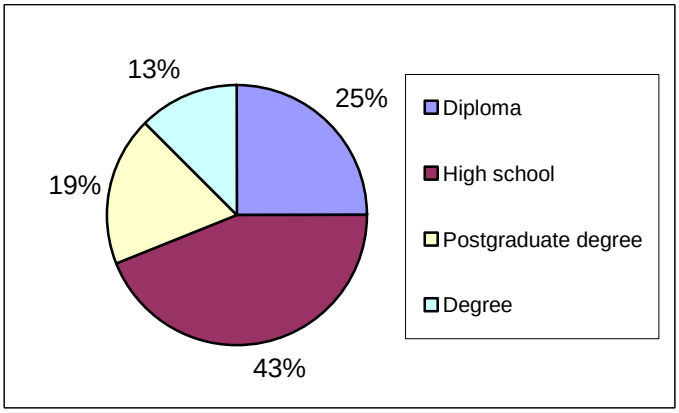


Figure 1.5.1. Pie graph demonstrating education level of patients (32 % of patients were graduates)

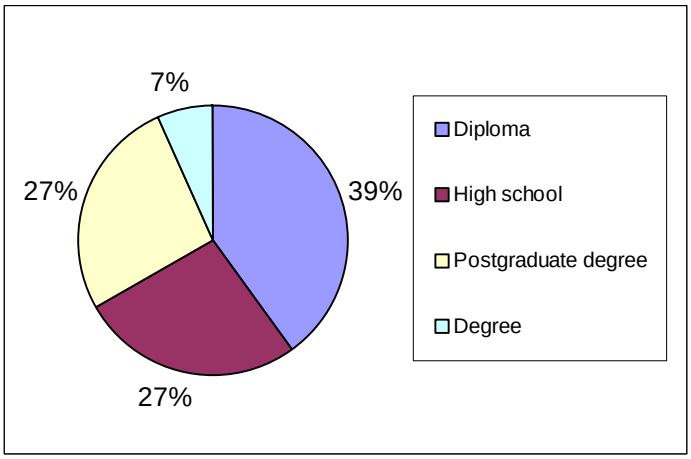


Figure 1.5.2 Pie graph demonstrating education level of controls (34 % of controls were graduates)

1.6. Employment status

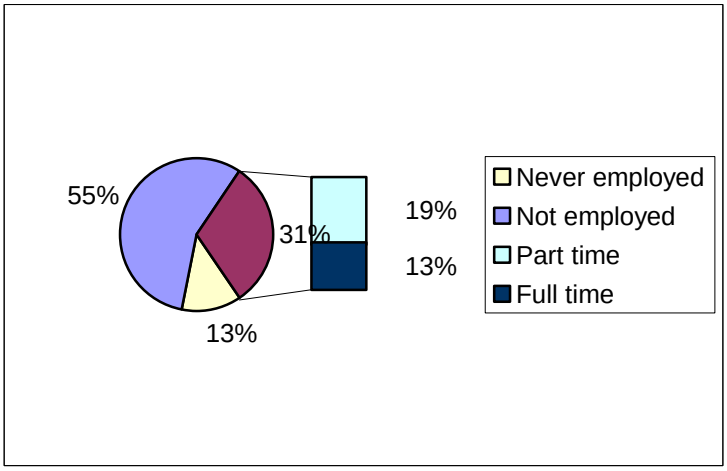


Figure 1.6.1 Pie graph demonstrating the employment status of patients (31 % of patients are currently employed)

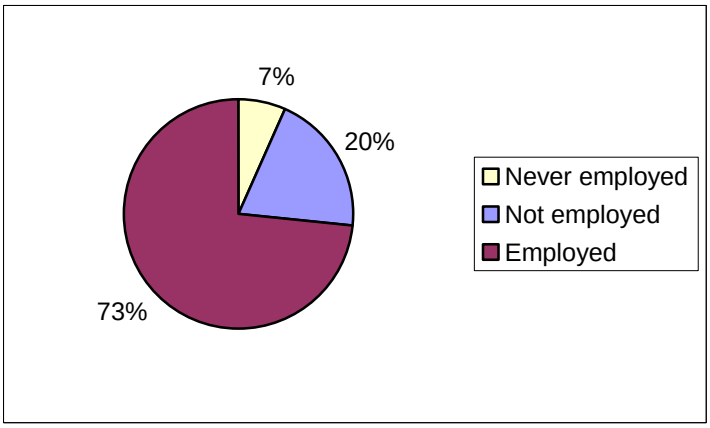


Figure 1.6.2 Pie graph demonstrating the employment status of controls (73 % of controls are currently employed)

1.7. Disability compensation

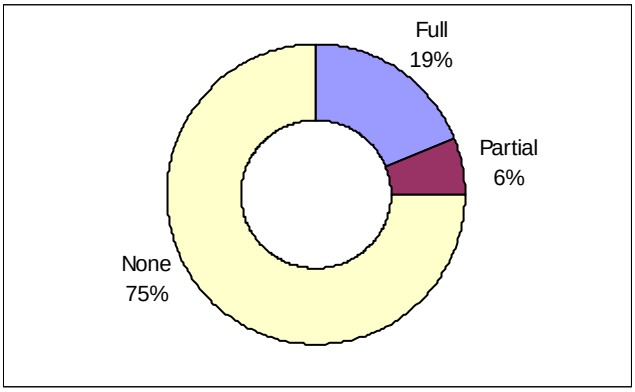


Figure 1.7. Graph demonstrating the disability compensation received by patients. (25 % of patients received disability compensation)

1.8. Fukuda CFS diagnostic criteria

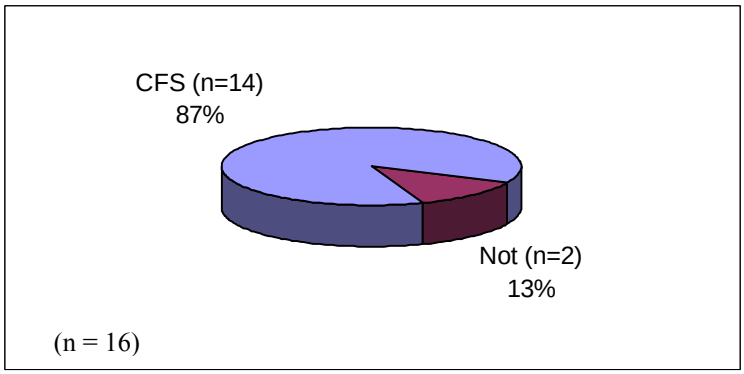


Figure 1.8. Pie graph showing percentage of patients fulfilling Fukuda chronic fatigue syndrome (CFS) diagnostic criteria (none of the controls subjects fulfilled the criteria).

1.9. Physical and psychological stressors in lifetime

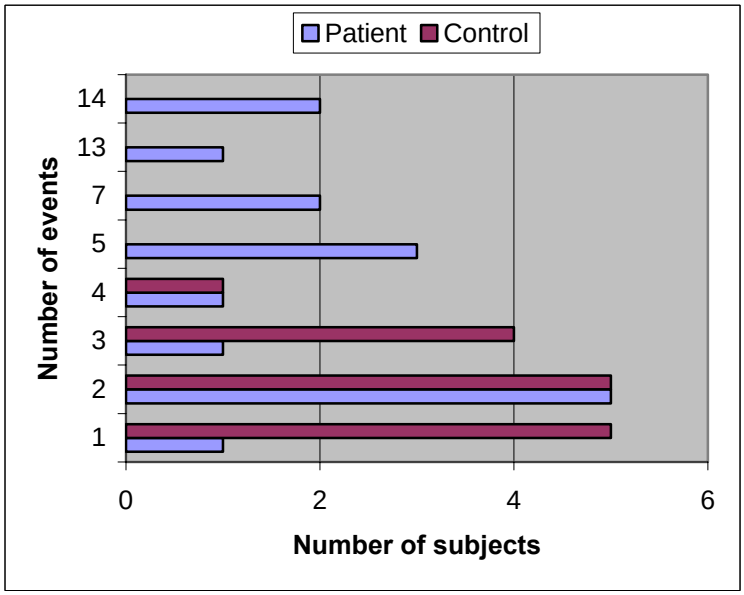


Figure 1.9.1. Bar graph showing the number of lifetime traumatic events for the patients and controls. The y-axis shows the number of events that occurred during the lifetime of the relevant subject on the x-axis.

Patient group (n=16)
Mean (SD): 5.50 (4.44)

Control group (n=14)
Mean (SD): 2.07 (0.96)

Statistical difference
P = 0.0071*

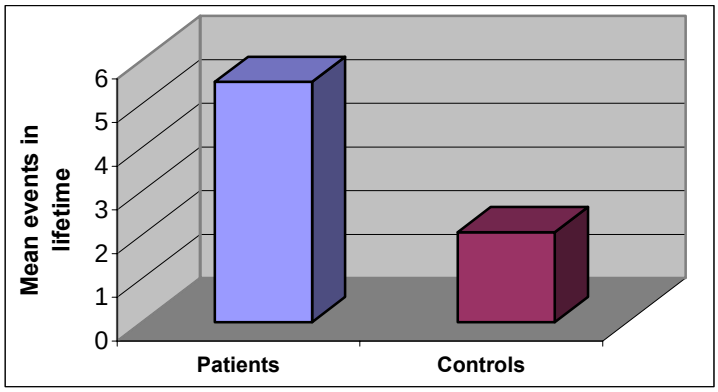


Figure 1.9.2. The mean traumatic events that occurred during the lifetime of patients and controls respectively. P-value obtained with Mann-Whitney test.
* indicates significant difference ($p \leq 0.05$)

1.10. Perceived events that preceded of FM onset

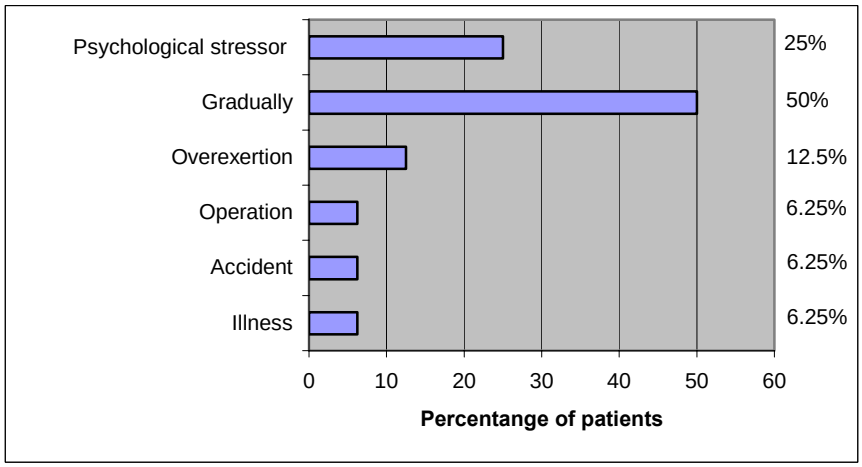


Figure 1.10. Bar graph showing the percentages of the different types of events patients reported to have preceded the onset of their FM complaints.

1.11. Age of onset

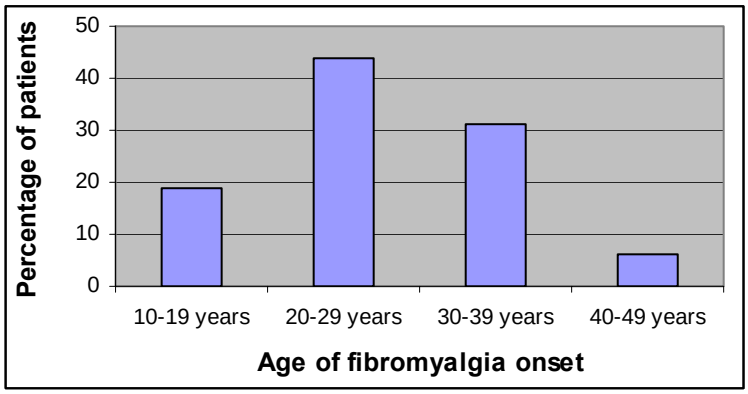


Figure 1.11. Bar graph indicating the most common age interval classes for the onset of fibromyalgia complaints. For each age interval class, the percentage of patients whose symptoms started to appear during that age is indicated on the vertical axis. The ages for onset ranged from 14 to 42 years of age.

1.12. Duration of FM complaints

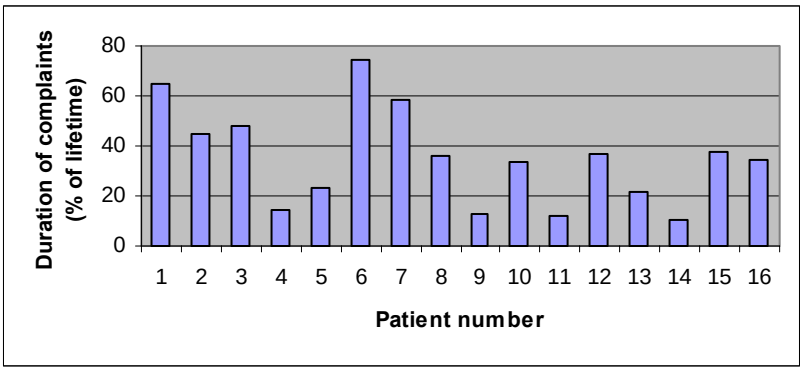


Figure 1.12. Bar graph showing the duration of FM complaints for each patient in terms of the percentage of the patients' lifetime he/she is suffering from FM.

Mean duration of complaints (only applicable to patients)
Mean (n=16): 16.56 (SD 11.03)
Minimum value: 3.00
Maximum value: 41.00

1.13. Natural history of FM complaints (disease progression)

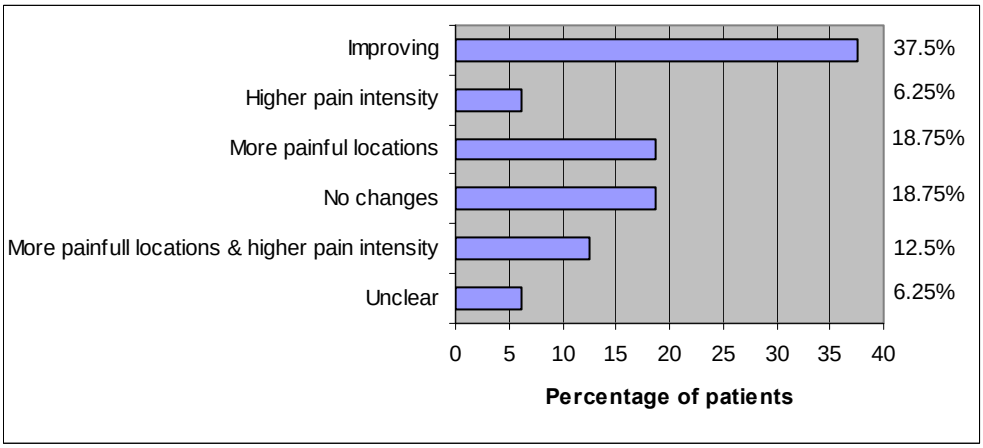


Figure 1.13. Natural history of complaints over previous 12 months as perceived by patients

1.14. Factors influencing FM complaints

Table 1.14. *Factors influencing FM complaints as perceived by patients*

Factors worsening fibromyalgia complaints	
Worse through stress	100 %
Worse through alcohol	50.0 %
Worse through exercise	37.5 %
Worse certain time of day	56.3 %
Worse through humidity changes	62.5 %
Worse through sleep	18.8 %
Worse through caffeine	43.8 %
Worse certain seasons	37.5 %
Worse through heat	56.3 %
Worse through barometric pressure changes	12.5 %
Worse through certain foods	31.3 %
Worse through sunlight	12.5 %
Worse through cold	68.8 %

Factors improving fibromyalgia complaints	
Better through mild exercise	43.8 %
Better through humidity changes	6.3 %
Better through sleep	75 %
Better through heat	18.8 %
Better through barometric pressure changes	6.3 %
Better through certain foods	6.3 %
Better through sunlight	25 %
Better through cold	6.3 %

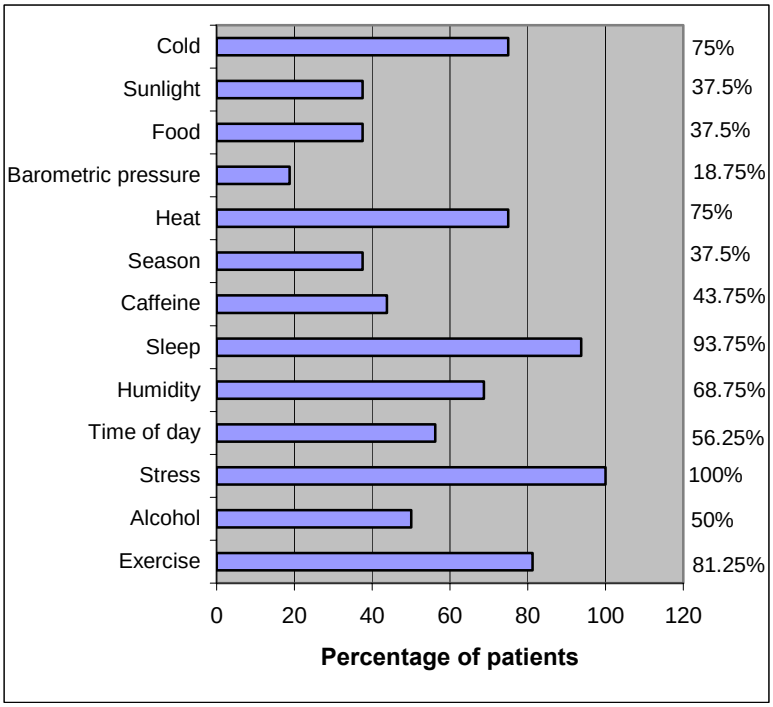


Figure 1.14. Bar graph showing the factors influencing FM symptom status as well as the percentage of patients who are affected by these factors. The effect of these factors on FM symptom status (whether it improves or worsens symptoms) differs from patient to patient.

1.15 Presence of allergies

The number of subjects suffering from allergies

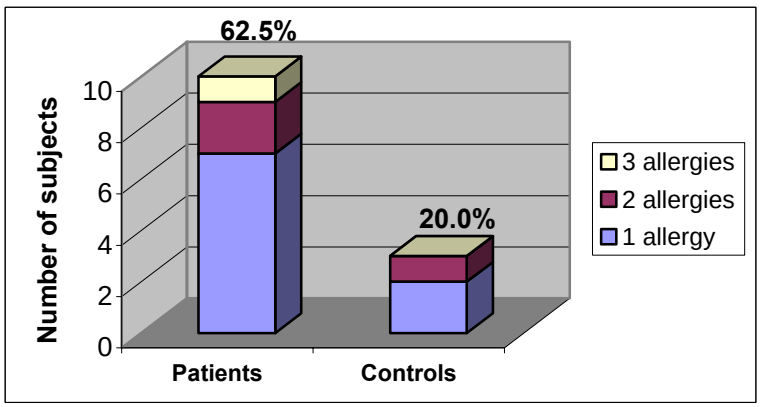


Figure 1.15. Fragmented bar graph showing the number of subjects suffering form allergies. The percentage of patients/controls suffering from allergies is displayed on top of the patient/control bar. Each bar also shows the proportion of the number of allergies each experimental group suffers from.

Means, standard deviation and statistical difference for the number of allergies patients and controls suffer from:
Patient group (n=16): 0.88 (SD 0.89)
Control group (n=15): 0.27 (SD 0.59)
Statistical difference (Mann-Whitney test): p-value = 0.0224*

1.16. Treatment program of patients

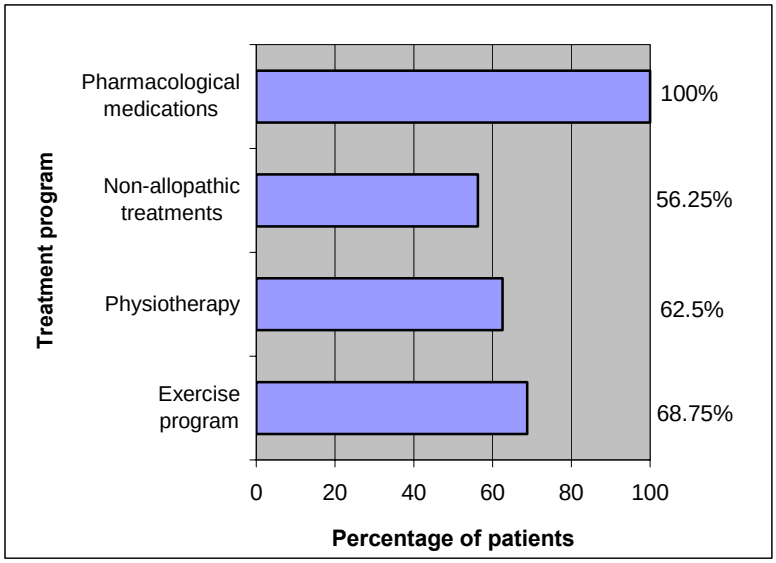


Figure 1.16.a Graph showing the percentages of patients using various treatments.

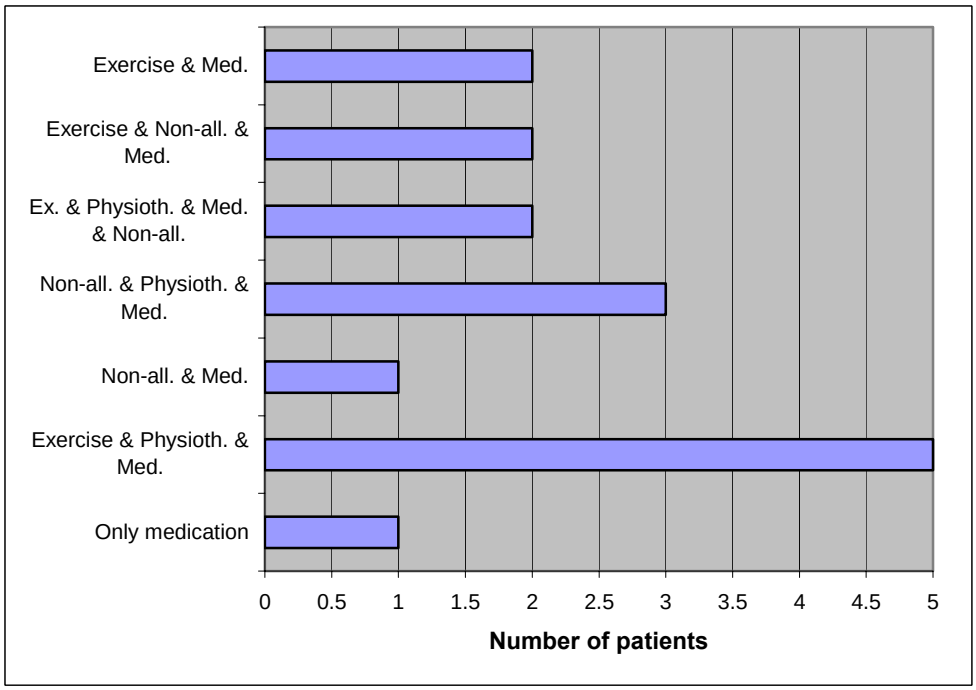


Figure 1.16.b The prevalence of combination therapy in the treatment of FM symptoms.

Table 1.16. *The influence of the treatment program followed on FM disease progression*

	Exercise	Physiotherapy	Medication	Non-allopathic
No change/ worse	6.25 %	6.25 %	43.75 %	6.25 %
Improving	0.00 %	6.25 %	25.00 %	6.25 %
		Statistical difference:	**P-value**	0.6468

The table displays the percentage of patients that showed no change or deterioration, or positive progress in response to various treatment programs. P-value calculated with ANOVA with age as a co-factor.

2. Review of current symptoms (RCS)

Table 2.1. *The mean, standard deviation and statistical difference for the total symptoms patients and controls presented with as indicated by the Review of current symptoms – questionnaire.*

	Mean (SD)	Minimum value	Maximum value	P-value
Patient group	51.69 (23.29)	21.00	95.00	
Control group	4.33 (5.33)	0.00	15.00	<0.0001*

This symptom score was calculated from responses to the symptoms listed on the Review of Current Symptoms questionnaire, and indicate the total number of symptoms the subjects presented with out of the total of 100 symptoms. P-value calculated with ANOVA with age as co-factor.
* indicates a significant difference ($p \leq 0.05$)

Table 2.2. *The means, standard deviation and statistical difference for the 15 symptom categories of the Review of current symptoms – questionnaire (see Figure 2.2.)*

Category number	Category	Patient Mean (SD)	Control Mean (SD)	P-value
1	Constitutional	1.77 (0.56)	0.13 (0.30)	< 0.0001*
2	Skin	0.89 (0.52)	0.02 (0.05)	< 0.0001*
3	Eyes	0.99 (0.63)	0.08 (0.21)	< 0.0001*
4	Ears	1.06 (0.70)	0.18 (0.60)	< 0.0001*
5	Nose/Throat	0.80 (0.56)	0.02 (0.06)	< 0.0001*
6	Mouth	0.64 (0.79)	0.02 (0.06)	0.0134*
7	Lymph nodes	0.97 (0.92)	0.03 (0.13)	< 0.0001*
8	Breast	0.48 (0.66)	0.00 (0.00)	0.3492
9	Lungs	0.92 (0.57)	0.03 (0.06)	< 0.0001*
10	Gastrointestinal	0.94 (0.56)	0.01 (0.06)	< 0.0001*
11	Muscles	2.53 (0.38)	0.22 (0.32)	< 0.0001*
12	Joints	1.52 (0.77)	0.00 (0.00)	< 0.0001*
13	G.U. and Hormonal	0.41 (0.46)	0.01 (0.04)	0.1169
14	Thyroid	0.71 (0.75)	0.00 (0.00)	0.0075*
15	Neuropsychiatric	0.99 (0.52)	0.04 (0.07)	< 0.0001*

Abbreviations: G.U. – genital-urinary tract. P-value calculated with ANOVA with age as co-factor.
* indicates a significant difference ($p \leq 0.05$); reason for non-significant p-value for category 8 and 13 is the great standard deviation in relation to the mean value in the patient group.

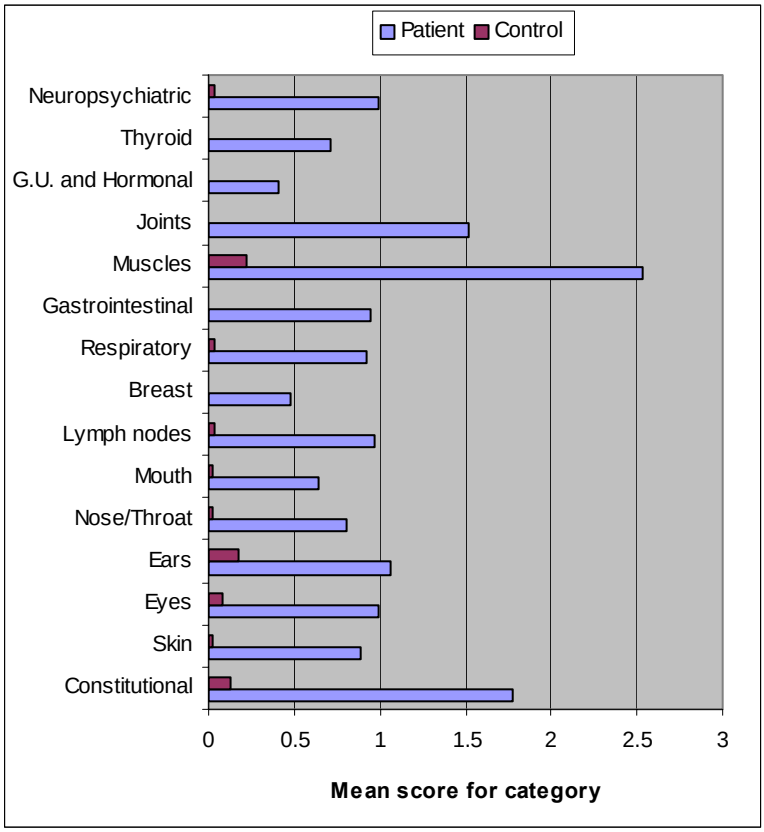


Figure 2.2. Bar graph showing the mean patient and control responses (ranging from 0 – absent; to 3 – severe) for each of the 15 symptom categories of the Review of current symptoms – questionnaire.

Table 2.3. *The prevalence (in percentage) of the most severe symptoms in patient group in comparison to controls (see Figure 2.3. on next page)*

Symptom	Patients	Controls
General fatigue	100.00%	20.00%
Sleep disturbances	93.75%	13.33%
Tight/ stiff muscles	100.00%	20.00%
Neck pain	100.00%	26.66%
Shoulder pain	93.75%	13.33%
Upper back pain	81.25%	0.07%
Lower back pain	100.00%	40.00%
Severe headaches	75.00%	0.00%

Table 2.4. *The prevalence of associated conditions in the patient and control group*

Associated condition	Patients	Controls
Chronic Fatigue Syndrome	87.50%	0.00%
Irritable Bowel Syndrome	50.94%	1.75%
Headaches	71.88%	13.14%
Premenstrual Syndrome	18.75%	6.67%
Thyroid problems	35.42%	0.00%
Self-assessed global anxiety	68.75%	0.00%
Self-assessed global depression	87.50%	0.07%

Chronic Fatigue Syndrome judged based on Fukuda diagnostic criteria. Irritable Bowel Syndrome based on the presence of bloating or passing gas, diarrhea, constipation, abdominal cramps and aches. Headaches based on the presence of mild/ moderate and severe headaches. Premenstrual Syndrome based on the presence of premenstrual and menstrual cramps. Thyroid problems based on presence of lump/mass in neck, cold or heat tolerance, history of x-ray to neck. Anxiety and depression is self-assessed by patient.

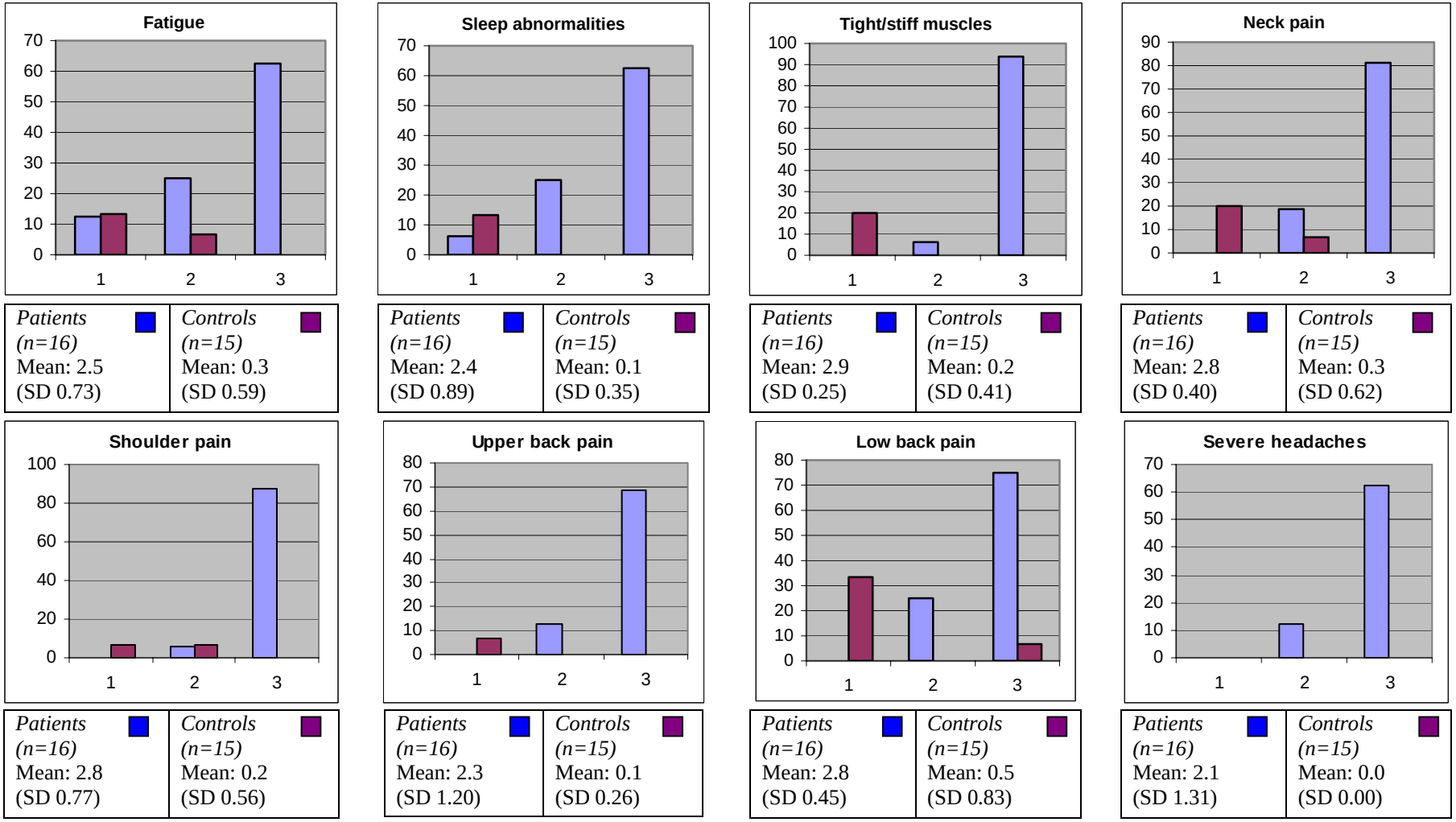


Figure 2.3. The mean response (ranging from 0 – absent; to 3 – severe) and standard deviation for the most severe symptoms associated with fibromyalgia. The statistical difference between patients and controls for each symptom is calcualted with ANOVA and found to be highly significant ($p = 0.0001$).

3. Fibromyalgia Impact Questionnaire (FIQ)

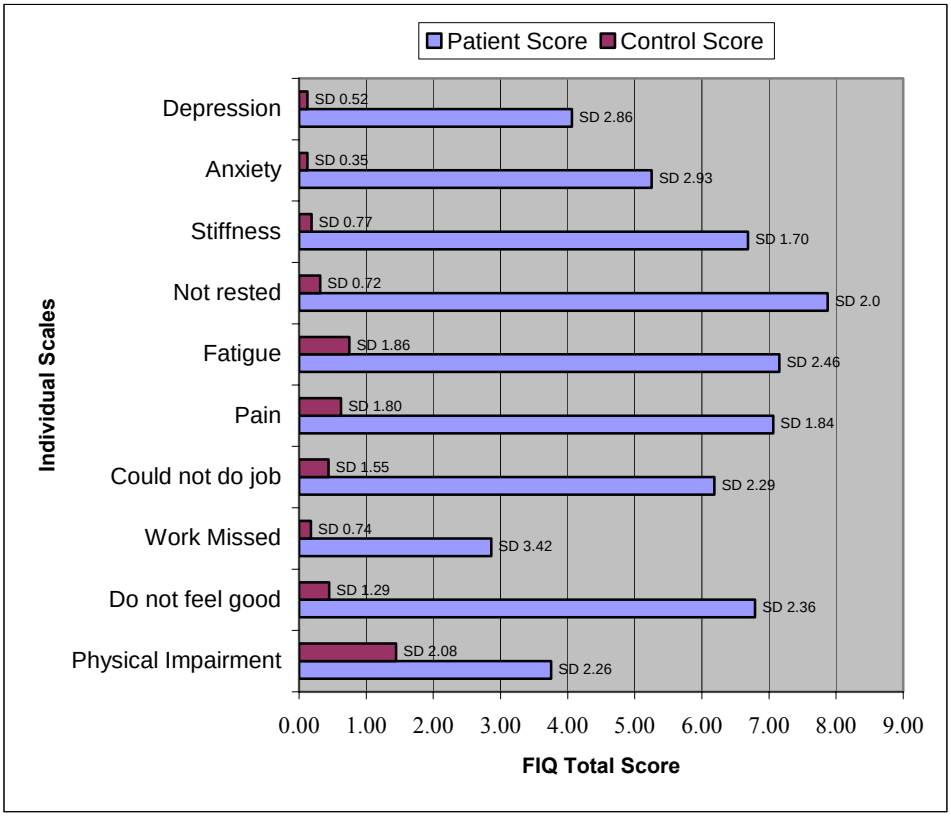


Figure 3.1. The mean total score for each of the individual scales on the Fibromyalgia Impact Questionnaire for patients and controls. Statistical difference between groups: $p < 0.0001$ (calculated with ANOVA with age as co-factor).

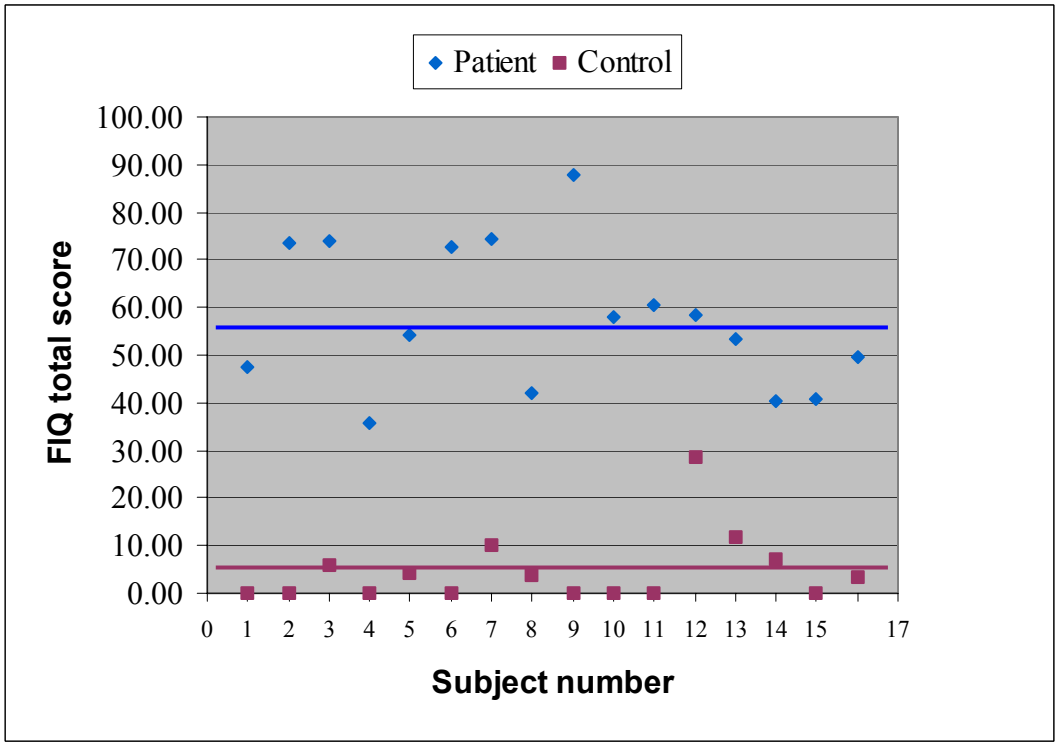


Figure 3.2. The Fibromyalgia Impact Questionnaire (FIQ) total scores for each subject pair. The strait line indicates the group mean: Patients – 57.69 (SD 15.19); Controls – 4.94 (SD 7.59). Statistical difference between groups: $p < 0.0001$ (calculated with ANOVA with age as co-factor).

4. Salivary cortisol levels

Patient group (n=16)
Mean cortisol level:
9.59 ng/ml (SD 2.79)

Control group (n=15)
Mean cortisol level:
5.60 ng/ml (SD 2.30)

Statistical difference
P-value: 0.0003*

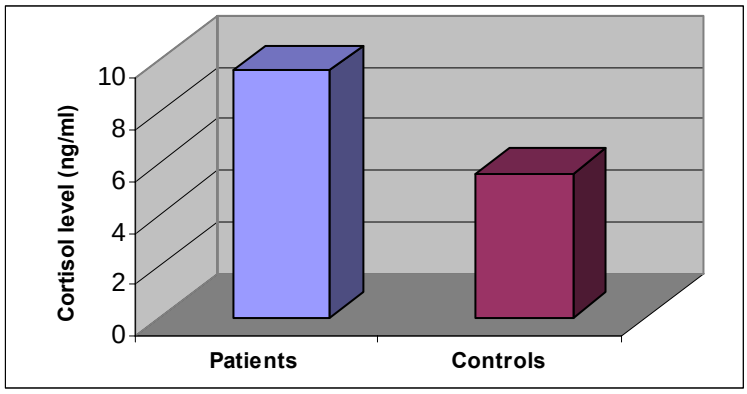


Figure 4. Mean cortisol levels for patients and controls. P-value obtained with Mann-Whitney test.
* indicates significant difference ($p \leq 0.05$)

5. R-R interval recordings (heart rate variability)

5.1 Physical stressor (orthostatic test)

Table 5.1.1. *The means, standard deviations and statistical difference for HRV measures after physiological compensation had occurred*

Variable	Patients *(n = 16)*	Controls *(n = 12)*	p-value
Supine – Mean (SD)			
Mean HR	75.48 (11.19)	65.12 (12.59)	0.0299*
LF (ms²)	167.55 (312.20)	297.73 (338.07)	0.3015
HF (ms²)	288.07 (546.59)	354.75 (406.41)	0.7256
LF (n.u.)	47.86 (23.12)	47.49 (19.29)	0.9647
HF (n.u.)	52.14 (23.12)	52.51 (19.29)	0.9647
LF/HF ratio	1.41 (1.36)	1.23 (1.02)	0.7050
Sitting – Mean (SD)			
Mean HR	77.76 (10.84)	69.01 (12.38)	0.0594
LF (ms²)	155.17 (222.51)	300.16 (261.46)	0.1254
HF (ms²)	133.62 (168.61)	325.09 (399.55)	0.0954
LF (n.u.)	51.33 (22.36)	53.90 (17.04)	0.7425
HF (n.u.)	48.67 (22.36)	46.10 (17.04)	0.7425
LF/HF ratio	1.64 (1.60)	1.47 (0.96)	0.7467
Standing – Mean (SD)			
Mean HR	93.29 (14.65)	82.53 (13.79)	0.0630
LF (ms²)	127.43 (264.04)	406.58 (494.82)	0.0969†
HF (ms²)	25.86 (33.60)	33.85 (34.49)	0.5495
LF (n.u.)	72.61 (17.96)	86.12 (8.97)	0.0188*†
HF (n.u.)	27.39 (17.96)	13.88 (8.97)	0.0188*†
LF/HF ratio	5.42 (5.36)	10.98 (10.11)	0.1046†

P-values calculated with the Pooled T-test
† indicates Separate T-test
* indicates significant difference ($p \leq 0.05$)

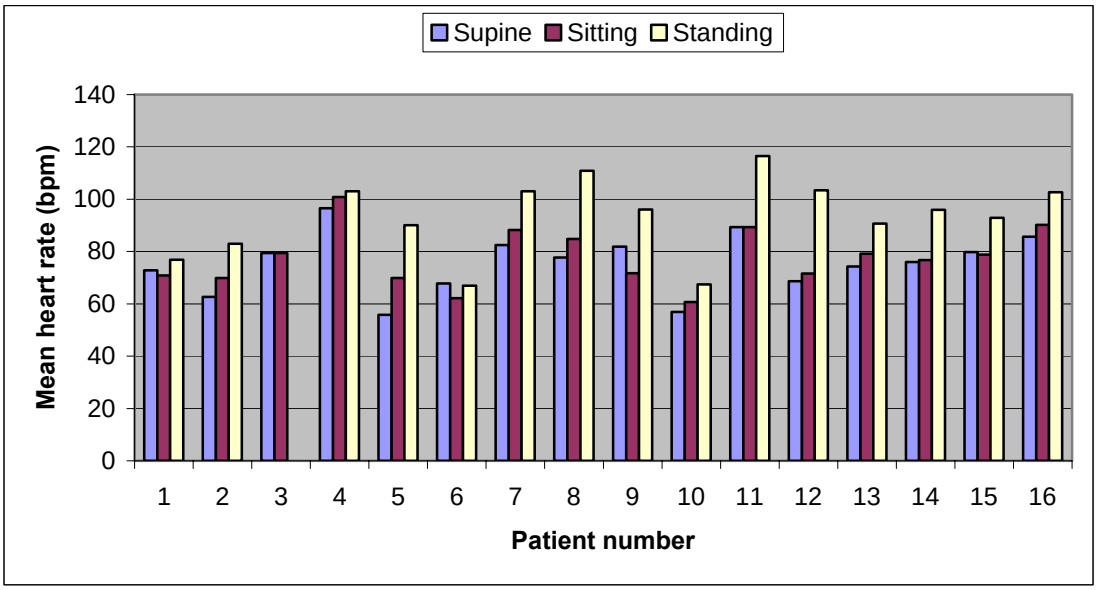


Figure 5.1.1.a Mean heart rates in the three bodily positions for the 16 patients.

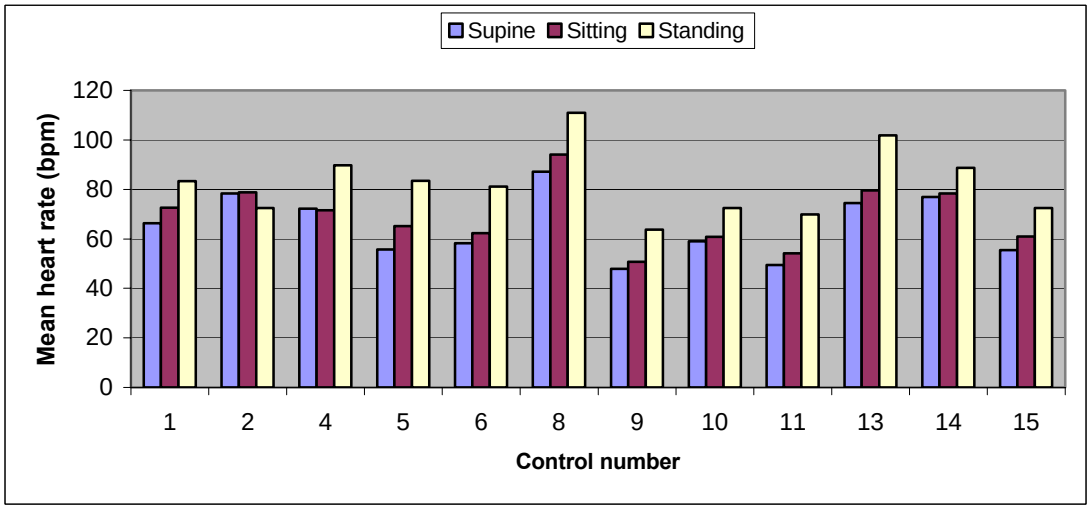
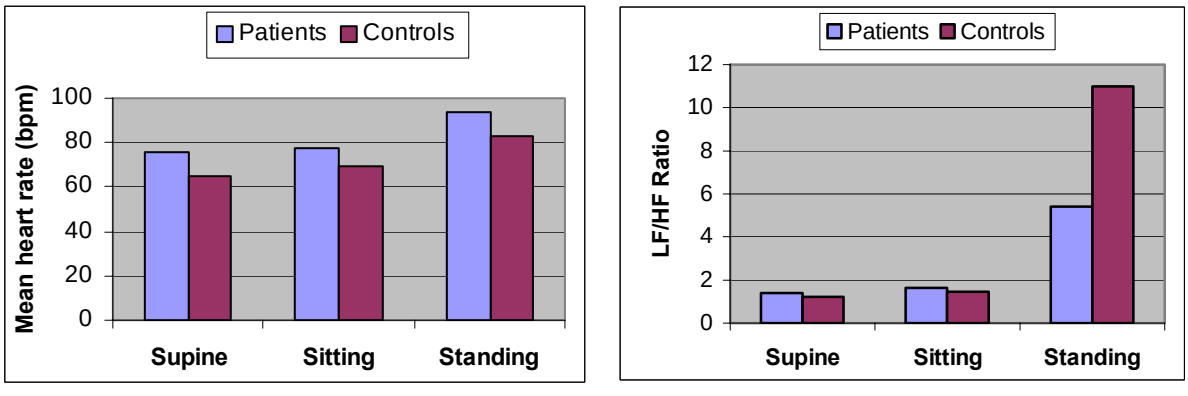
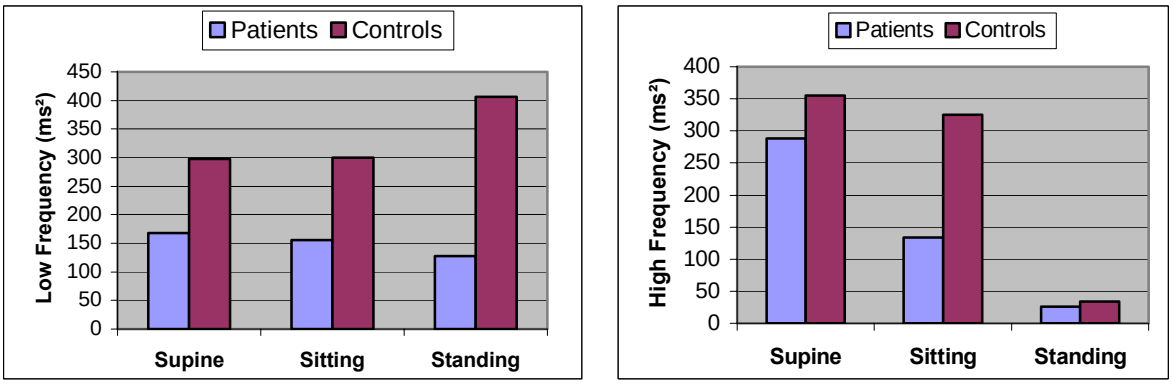


Figure 5.1.1.b Mean heart rates in the three bodily positions for the 15 controls.



A **B**

Figure 5.1.1.c Graphs illustrating different HRV measures for the supine, sitting and standing bodily position of the patients in relation to controls. These graphs illustrate HRV after physiological compensation to the bodily position had occurred (after 5 minutes in the specific position). **A** – Mean heart rate; **B** – LF/HF ratio.



C **D**

Figure 5.1.1.c Graphs illustrating different HRV measures for the supine, sitting and standing bodily position of the patients in comparison to controls. These graphs illustrate HRV after physiological compensation to the bodily position had occurred (after 5 minutes in the specific position).
C – low frequency (LF); **D** – high frequency (HF).

Table 5.1.2. *The means, standard deviation and statistical difference calculated for total power in frequency domain (s²/Hz)*

	Total power	**Patients *(n=16)* Mean (SD)**	**Controls *(n=14)* Mean (SD)**	**p**
1	0 – 5 min	523.74 (834.33)	829.67 (776.83)	0.1201
2	5 – 10 min	473.62 (849.45)	707.78 (715.83)	0.1066
3	10 – 15 min	284.41 (310.64)	981.46 (835.11)	0.0043*
4	15 – 20 min	309.78 (333.58)	666.48 (575.38)	0.0355*
5	20 – 25 min	431.80 (756.93)	522.89 (681.97)	0.1408
6	25 – 30 min	173.21 (309.57)	473.59 (548.73)	0.0437*

Explanation: Physical stressor **- 1**and **2**: supine, **3** and **4**: sitting, **5** and **6**: standing.
P-value calculated with ANOVA with age as co-factor
* indicates statistical significant difference between groups ($p \leq 0.05$)

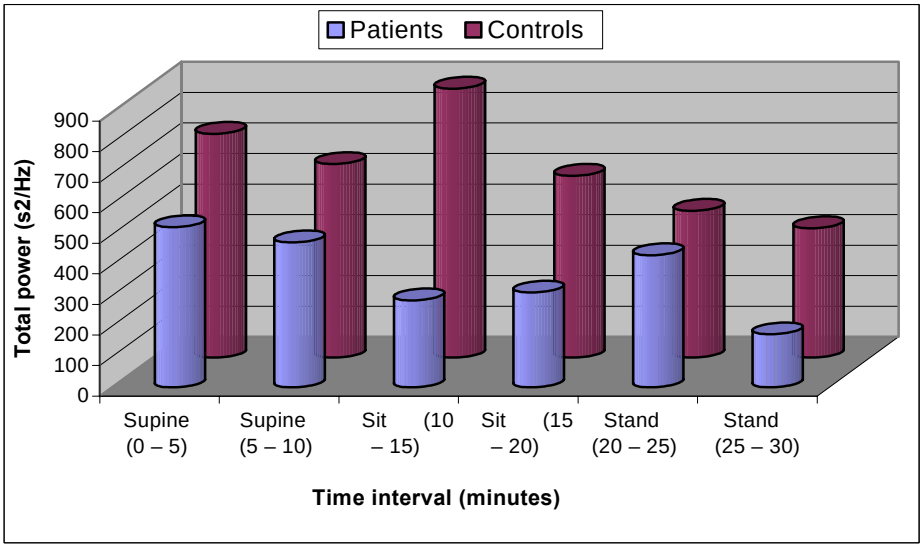


Figure 5.1.2. Physical stressor: The total power (in s²/Hz) calculated in 5-min intervals for the 3 bodily positions. The difference between the groups were statistical significant for sitting (10-15 min), sitting (15-20 min) and standing (25-30 min).

Table 5.1.3. *The means, standard deviation and statistical difference for HRV measures for the change from one bodily position to another (physiological compensation)*

	Δ Change 1 (Sitting – Supine)				
Variable	**Patients *(n = 16)* Mean (SD)**	**p†**	**Controls *(n = 12)* Mean (SD)**	**p†**	**p‡**
Mean HR	3.15 (4.43)	0.0113*	1.86 (7.03)	0.0597	0.5583
Mean HR (STD)	0.33 (0.98)	0.1961	0.81 (1.22)	0.0342*	0.2665
LF (ms²)	5.81 (312.64)	0.2343	246.01 (369.31)	0.0121*	0.0739
HF (ms²)	- 196.15 (540.54)	0.8361	- 6.92 (63.19)	0.8139	0.1848
LF/HF ratio	1.65 (2.41)	0.0084*	1.16 (1.75)	0.0186*	0.5595
Total power	- 189.21 (763.92)	0.3520	273.68 (389.66)	0.0121*	0.0666
	Δ Change 2 (Standing – Sitting)				
Mean HR	12.58 (9.42)	0.0002*	10.54 (7.16)	0.0060*	0.5426
Mean HR (STD)	0.40 (1.28)	0.3942	0.24 (1.35)	0.5303	0.7581
LF (ms²)	103.65 (353.97)	0.3343	125.61 (439.21)	0.4802	0.8867
HF (ms²)	- 5.19 (259.89)	0.0231*	- 264.12 (352.60)	0.0005*	0.0374*
LF/HF ratio	5.69 (8.62)	0.0015*	5.47 (4.13)	0.0005*	0.9348
Total power	106.05 (506.44)	0.9096	- 143.59 (541.33)	0.2721	0.2285

p†: statistical difference for the change from one bodily position to another within the patient and control group respectively, p-values calculated with Wilcoxon statistical test.
p‡: statistical difference for the difference between the two study groups with regard to the change from one bodily position to another, p-values calculated with Pooled T-test.

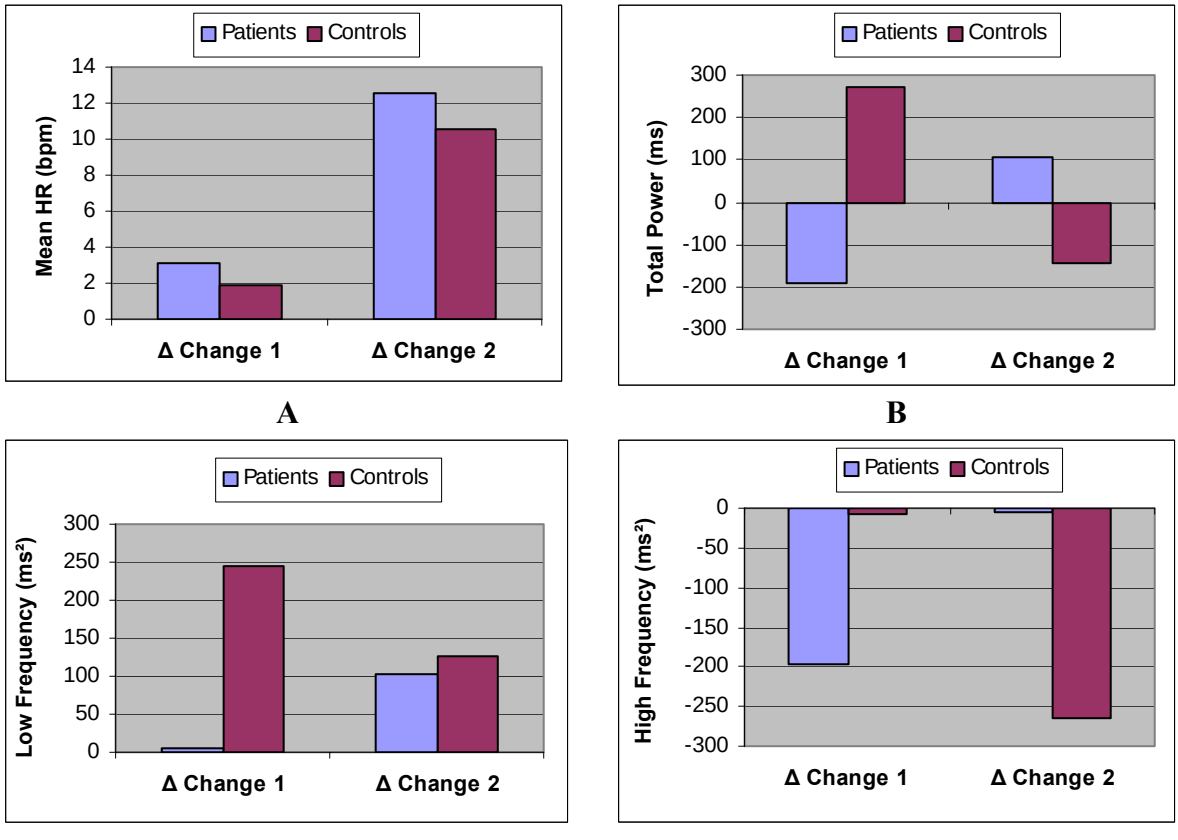


Figure 5.1.3. Graphs illustrating different HRV measures for the change from supine to sitting (change 1) and sitting to standing (change 2) of the patients in comparison to the controls. These graphs illustrate HRV during physiological compensation to the new bodily position (first 5 minutes in the specific position). **A** – mean heart rate; **B** – total power; **C** – low frequency (LF); **D** – high frequency (HF).

5.2. Psychological stressor

Table 5.2. *The means, standard deviation and statistical difference for HRV measures for the autonomic reaction to filling out the ECR-R questionnaire*

	Δ (Basal – ECR-R)				
Variable	**Patients *(n = 16)* Mean (SD)**	**p†**	**Controls *(n = 12)* Mean (SD)**	**p†**	**p‡**
Mean HR	- 2.52 (2.16)	0.0005*	- 0.78 (3.24)	0.5829	0.1250
Mean HR (STD)	- 0.20 (0.82)	0.6002	0.52 (1.13)	0.1167	0.0779
LF (ms²)	- 11.29 (97.16)	0.3824	176.53 (397.77)	0.5303	0.1368†
HF (ms²)	31.39 (40.54)	0.0107*	31.02 (79.65)	0.2393	0.9887†
LF (n.u.)	- 10.35 (14.84)	0.0192*	2.12 (18.92)	0.5829	0.0785
HF (n.u.)	10.35 (14.84)	0.0192*	- 2.12 (18.92)	0.5829	0.0785
LF/HF ratio	- 1.03 (2.47)	0.0546	1.03 (2.47)	0.2393	0.0489*

p†: statistical difference for the change from baseline to emotional stress within the patient and control group respectively, p-values calculated with Wilcoxon statistical test.
p‡: statistical difference for the difference between the two study groups with regard to the change from baseline to emotional stress, p-values calculated with Pooled T-test († separate T-test).

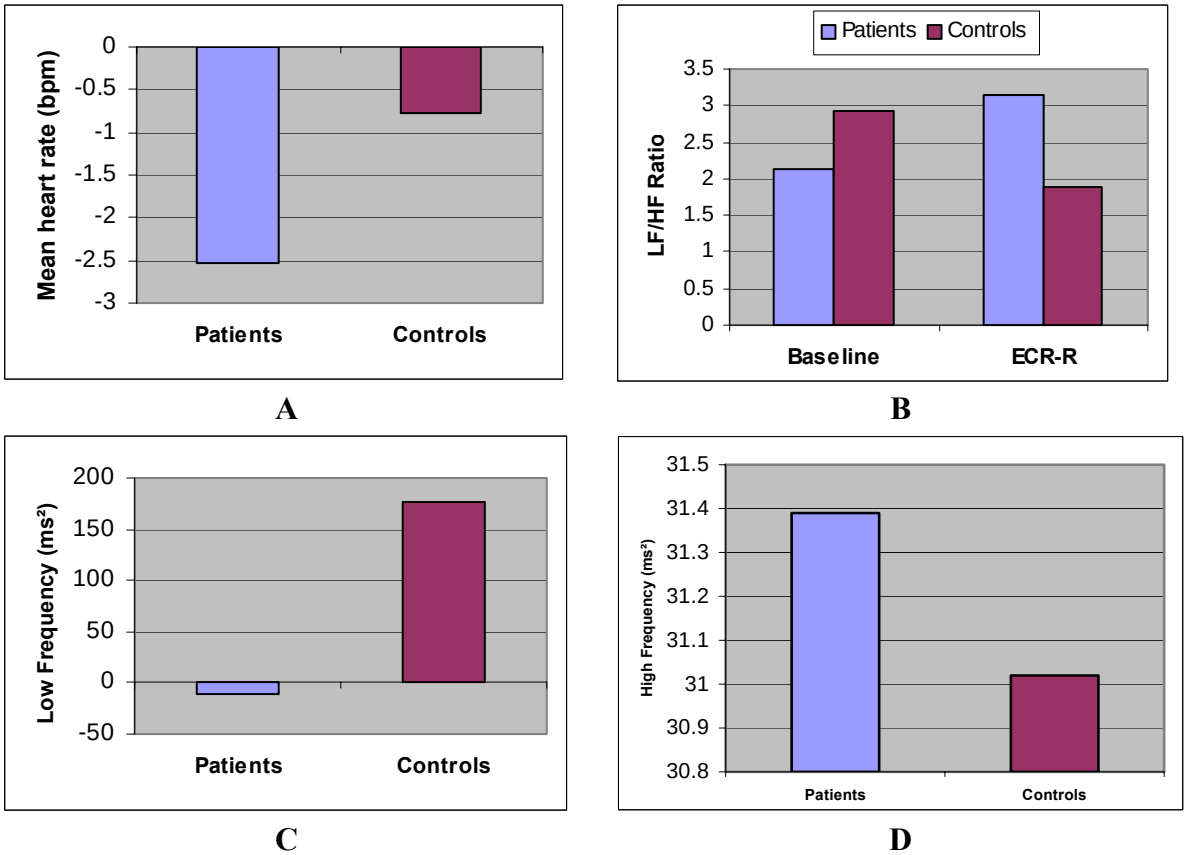


Figure 5.2.1 Graphs illustrating different HRV measures for the patients in comparison to the controls for the autonomic reaction to filling out the ECR-R questionnaire. These graphs illustrate HRV during physiological compensation to a psychological stressor. **A** – mean heart rate; **B** – LF/HF ratio; **C** – low frequency (LF); **D** – high frequency (HF).

Patient group (n = 13)
Baseline mean (SD):
200.00 (159.06)
ECR-R mean (SD):
189.13 (155.94)

Control group (n = 12)
Baseline mean (SD):
808.49 (735.51)
ECT-R mean (SD):
549.38 (466.57)

Statistical difference
p = 0.0100* (baseline)
p = 0.0201* (ECR-R)

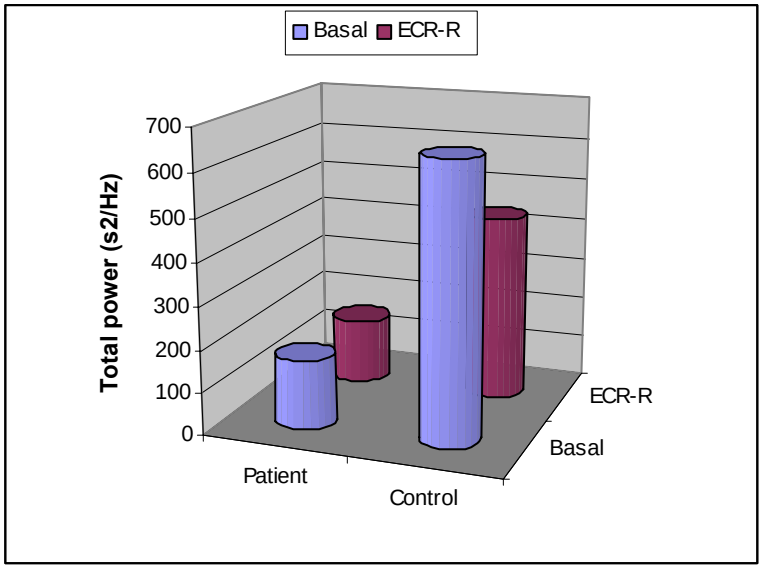


Figure 5.2.2. Psychological stressor: The total power (in s²/Hz) calculated from 5 minutes in the sitting bodily position as a baseline recording and 5 minutes of filling out the ECR-R questionnaire (still sitting), serving as the psychological stressor.
P-value calculated with ANOVA with age as co-factor
* indicates statistical significant difference between groups ($p \leq 0.05$)

6. Herrmann Brain Dominance Instrument (HBDI)

6.1. Profile scores

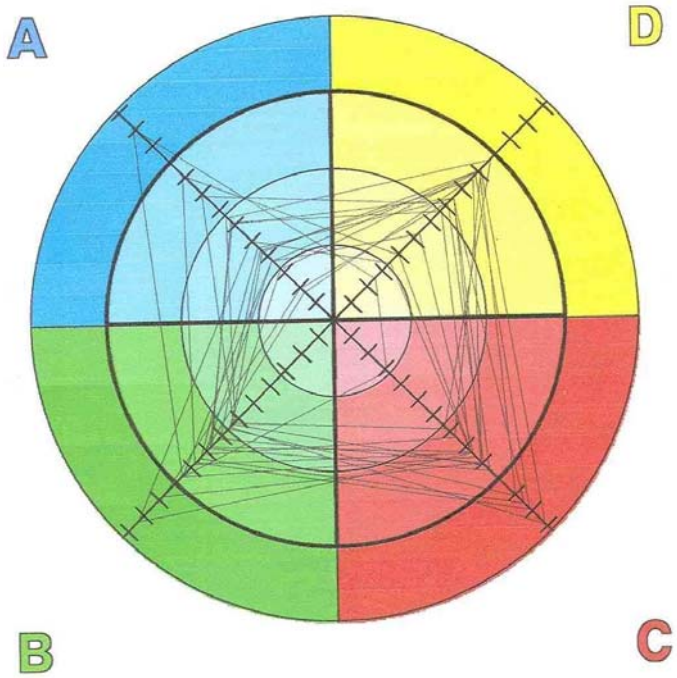


Figure 6.1.1. The group composite of all the patient profiles (the profiles of all the patients are plotted onto one graph). **Figure lables**: Quadrant A – cerebral left; quadrant B – limbic left; quadrant C – limbic right; quadrant D – cerebral right.

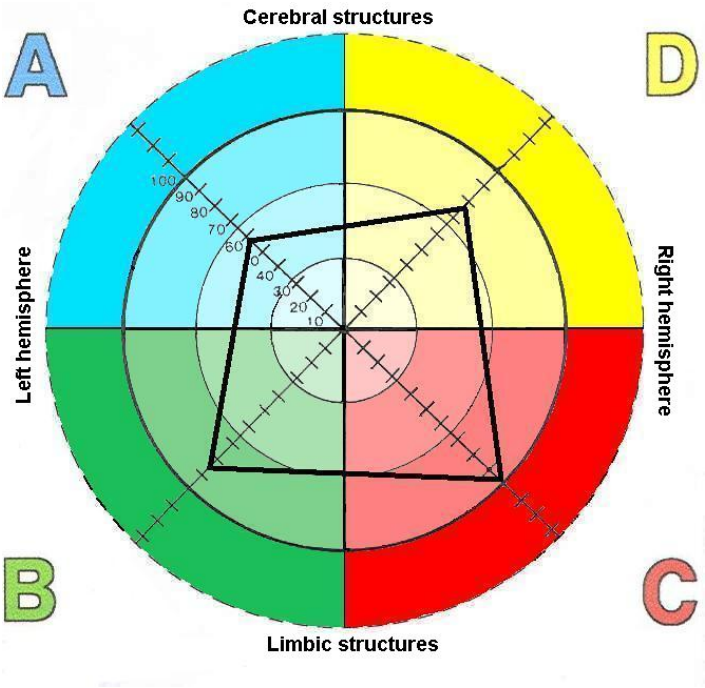
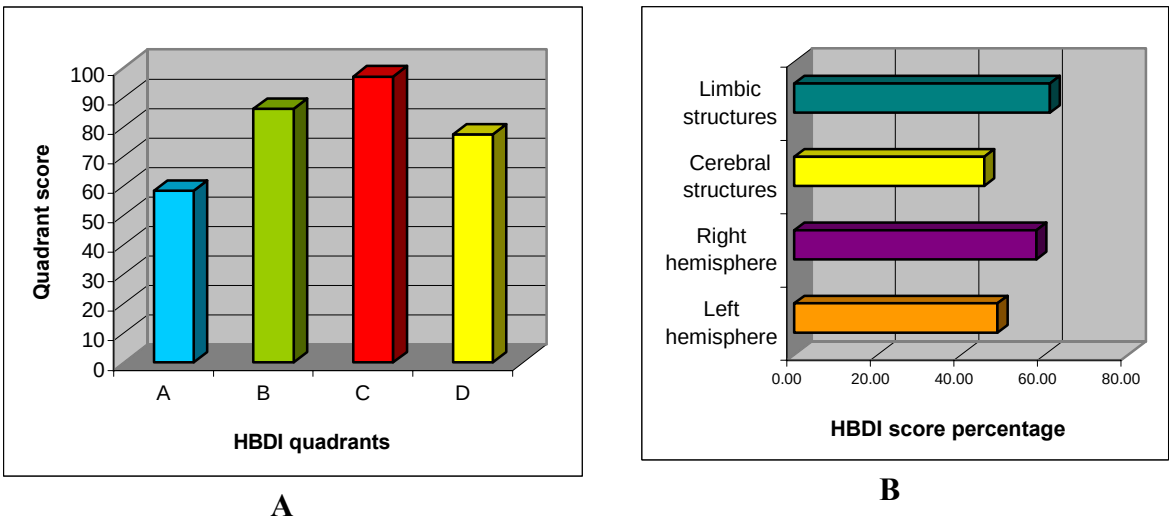


Figure 6.1.2. The mean profile for patients. **Figure lables**: Quadrant A – cerebral left; quadrant B – limbic left; quadrant C – limbic right; quadrant D – cerebral right.

Table 6.1. *The mean HBDI scores and standard deviations obtained by patients*

Variable	Means (SD) *(n=16)*	Variable	Means (SD) *(n=16)*
Quadrant A	54.56 (26.87)	Limbic structures	57.4 (7.46)
Quadrant B	80.69 (18.50)	Cerebral structures	42.63 (7.46)
Quadrant C	90.94 (22.92)	Right hemisphere	54.38 (11.99)
Quadrant D	72.56 (22.29)	Left hemisphere	45.63 (11.99)



A **B**

Figure 6.1.3. Bar graphs demonstrating the mean scores obtained by patients on the HBDI. **A** Scores obtained for each one of the four HBDI quadrants respectively. **B** Scores obtained for the four brain halves. The limbic structure percentage were composed by adding the scores obtained for quadrant B and C from figure **A** together; the cerebral structure percentage is the sum of quadrant A- and D-scores; the right hemisphere percentge is produced by adding quadrant C and D together; and the left hemisphere percentage is the sum of quadrant A- and B-scores.

6.2. Adjective pairs

Quadrant A:
Mean (SD): 4.63 (2.50)

Quadrant B:
Mean (SD): 6.19 (2.26)

Quadrant C:
Mean (SD): 8.63 (2.25)

Quadrant D:
Mean (SD): 4.56 (2.03)

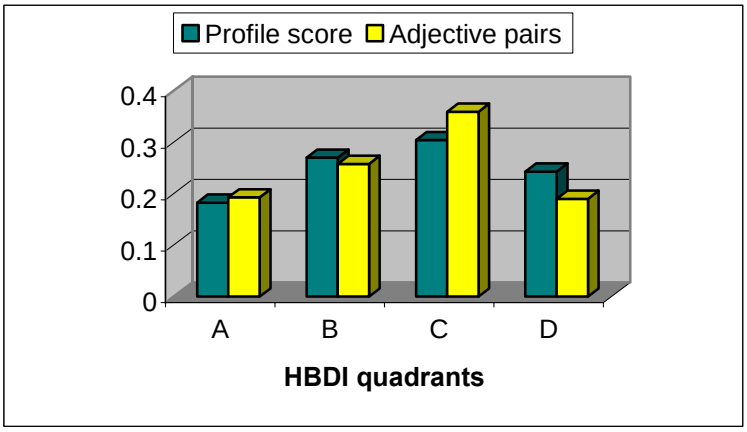


Figure 6.2. Patient adjective pair scores in relation to profile scores (adjective pair scores are indicative of quadrant preferences during stress)

6.3. Generic code/ Profile code

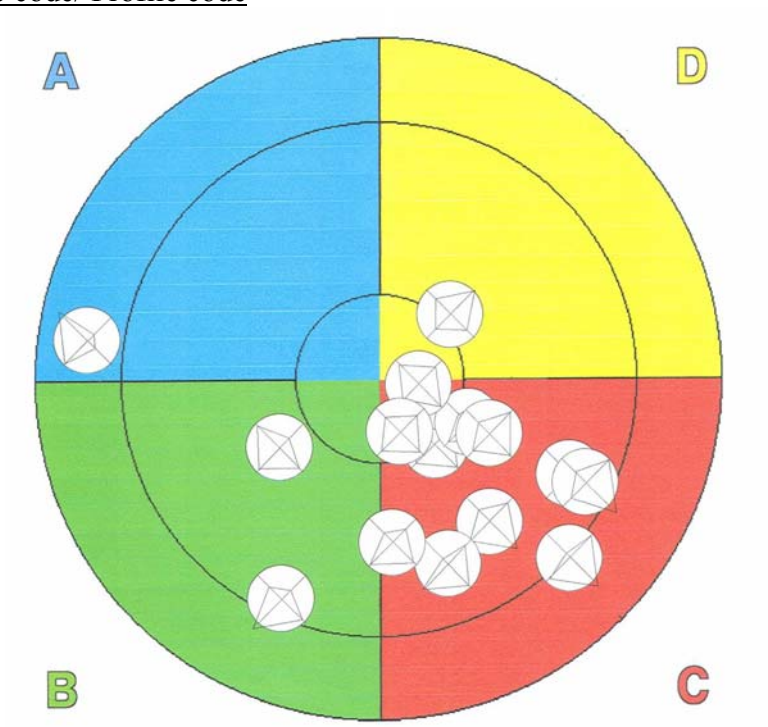
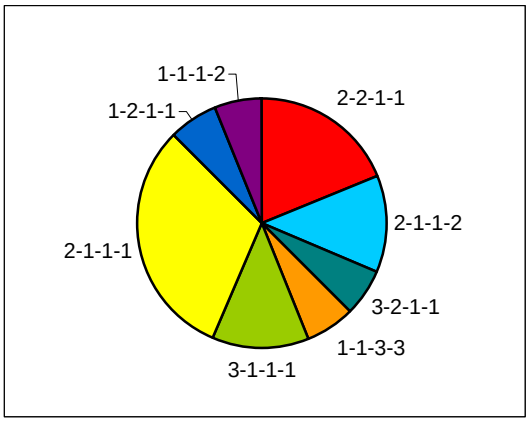
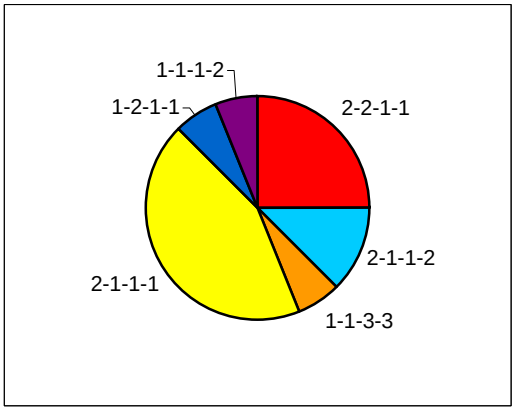


Figure 6.3.1. The generic codes of all the patients plotted onto one graph (the code is plotted in the dominant quadrant). **Figure lables**: Quadrant A – cerebral left; quadrant B – limbic left; quadrant C – limbic right; quadrant D – cerebral right.



A

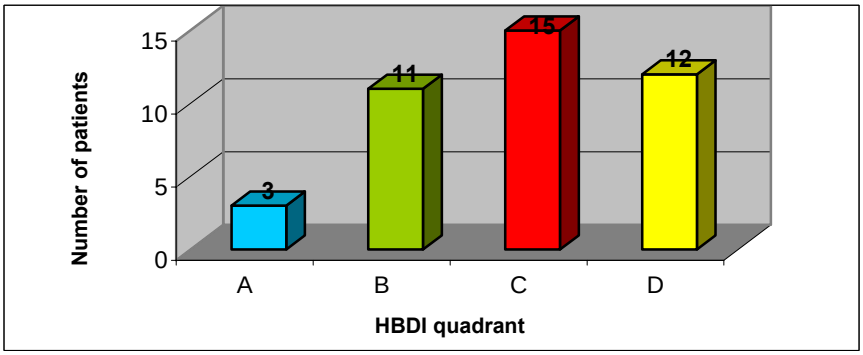
Generic code	Percentage
Code: 2-2-1-1	18.75 %
Code: 2-1-1-2	12.50 %
Code: 3-2-1-1	6.25 %
Code: 1-1-3-3	6.25 %
Code: 3-1-1-1	12.50 %
Code: 2-1-1-1	31.25 %
Code: 1-2-1-1	6.25 %
Code: 1-1-1-2	6.25 %



B

Generic code	Percentage
Code: 2-2-1-1	25.00 %
Code: 2-1-1-2	12.50 %
Code: 1-1-3-3	6.25 %
Code: 2-1-1-1	43.75 %
Code: 1-2-1-1	6.25 %
Code: 1-1-1-2	6.25 %

**Statistics available from population studies:*
Code: 2-1-1-1 – 16% of population at large, 24% of female population
Code: 2-2-1-1 – 14% of population at large, 17% of female population



C

Figure 6.3.2. A A pie graph demonstrating the prevalence of all the generic profile scores relevant to the patient group. **B** A simpler version of graph A, demonstrating the main profile classes patient generic codes can be divided in. Since the control subjects were not assessed with the HBDI, the statistics from population studies relevant to the generic codes observed in the patients are included. **C** Bar graph illustrating the number of patients showing dominance in the respective HBDI quadrants (quadrant A – cerebral left; quadrant B – limbic left; quadrant C – limbic right; quadrant D – cerebral right). Displayed on top of each quadrant bar is the number of patients who showed primary preference in that particular quadrant. * Statistics obtained from *Herrmann, N./ The creative brain – Appendix B. 2 nd ed. Tennessee: Quebecor Printing Book Group; 1994. p. 381-92.*

7. Attachment style – Experiences in close relationships –Revised (ECR-R)

Table 7.1. *The individual anxiety and avoidance score for each patient and control together with the attachment class the respective subject falls into (see Figure 7.1)*

	Patient score		Attachment	Control score		Attachment
	Anxiety	Avoidance	style	Anxiety	Avoidance	style
1	4.78	5.17	Fearful-avoidant	1.50	2.28	Secure
2	3.94	5.33	Dismissing	1.89	3.78	Secure
3	4.72	2.89	Preoccupied	1.00	1.33	Secure
4	4.67	3.28	Preoccupied	2.61	3.33	Secure
5	3.50	4.00	Secure	1.83	1.17	Secure
6	3.94	4.33	Dismissing	2.00	2.33	Secure
7	3.17	3.39	Secure	2.00	1.89	Secure
8	1.56	2.33	Secure	1.56	1.33	Secure
9	5.33	2.67	Preoccupied	1.83	2.22	Secure
10	1.61	1.33	Secure	1.00	1.00	Secure
11	1.56	4.72	Dismissing	1.00	1.17	Secure
12	5.78	6.94	Fearful-avoidant	1.00	1.00	Secure
13	4.50	5.06	Fearful-avoidant	2.06	2.78	Secure
14	1.89	2.67	Secure	1.39	1.72	Secure
15	1.83	1.72	Secure	1.89	3.78	Secure
16	2.50	1.67	Secure			

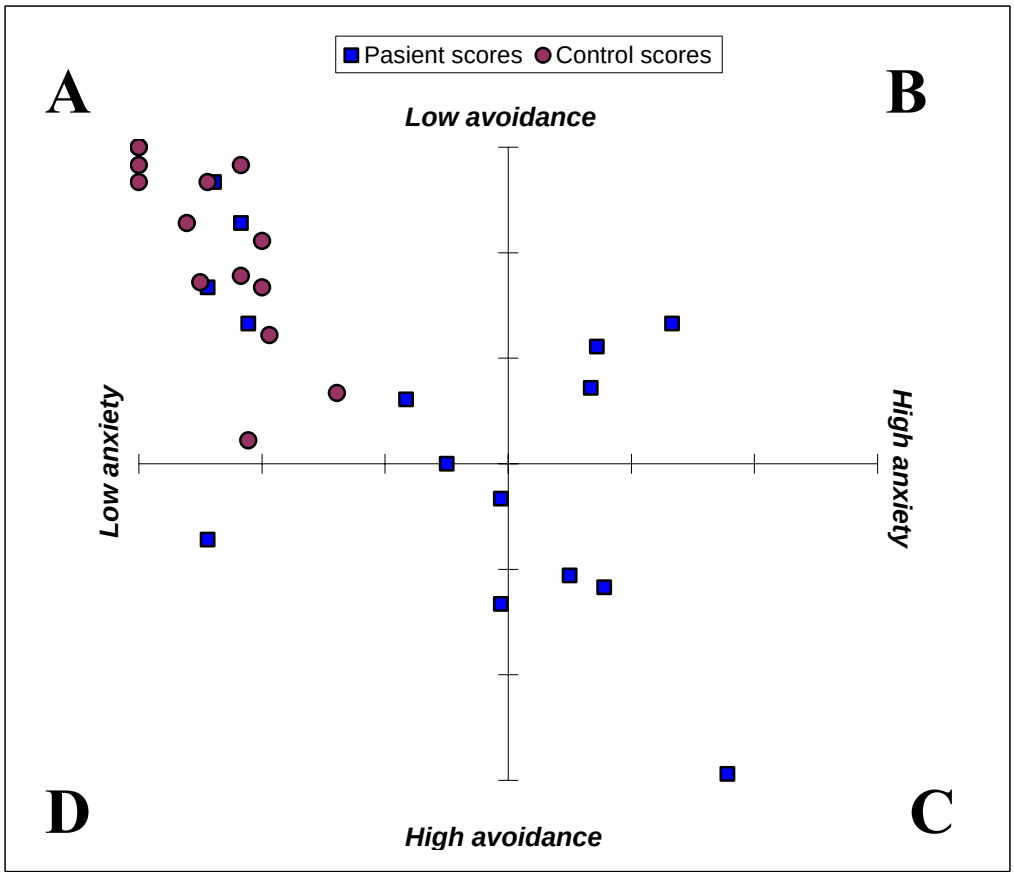


Figure 7.1. The attachment scores (in terms of anxiety and avoidance) plotted onto Barthelomew's two-dimensional graph. **Anxiety axis** (model of self) – individuals with a high score for this variable tend to be concerned about their partners' availability, attentiveness and responsiveness. A low score is associated with security in relationships. **Avoidance axis** (model of others/partner) – individuals on the high end of this dimension, prefer independence. Individuals on the low end tend to be more comfortable with intimacy. **Figure labels:** **A** - secure attachment; **B** – preoccupied attachment; **C** – fearful-avoidant attachment; **D** – dismissing-avoidant attachment.

Patient group (n=16)
Anxiety: 3.45 (SD 1.46)
Avoidance: 3.59 (SD 1.57)

Control group (n=14)
Anxiety: 1.62 (SD 0.49)
Avoidance: 1.95 (SD 0.88)

Statistical difference
Anxiety: p = 0.0001*
Avoidance: p = 0.0015*

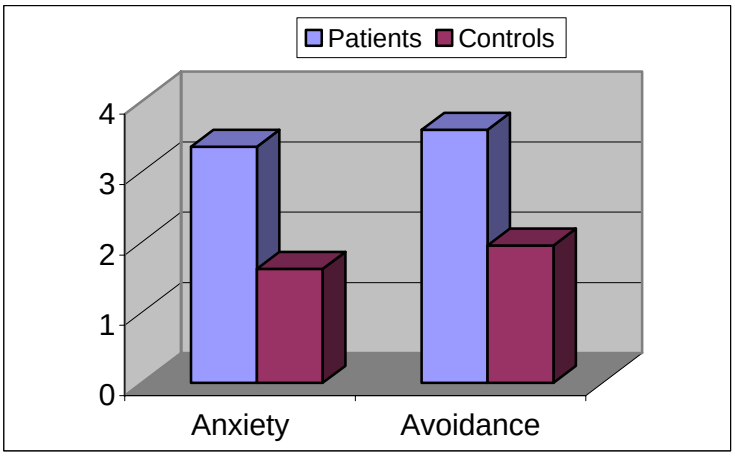


Figure 7.2. Mean anxiety and avoidance scores for patients and controls. P-values obtained with ANOVA test (with age as co-factor).
* indicates a statistical significant difference ($p \leq 0.05$)

Age as co-factor in attachment

Table 7.2. *Correlations between age and attachment variables anxiety and avoidance*

Patient group *(n=16)*			
	Age	**Anxiety**	**Avoidance**
Age p-value	1.00	- 0.12 0.6686	- 0.24 0.3785
Anxiety p-value	- 0.12 0.6686	1.00	0.59 0.0157*
Avoidance p-value	- 0.24 0.3785	0.59 0.0157*	1.00
Control group *(n=14)*			
	Age	**Anxiety**	**Avoidance**
Age p-value	1.00	- 0.46 0.0952	- 0.25 0.3867
Anxiety p-value	- 0.46 0.0952	1.00	0.76 0.0017*
Avoidance p-value	- 0.25 0.3867	0.76 0.0017*	1.00

* indicates a statistical significant difference ($p \leq 0.05$)

C. STATISTICAL CORRELATIONS

In order to compose a psychoneurological profile for the patients, it was necessary develop a model by which connections could be explored between the variables evaluated in the study. In this model (also refer to Figure 1, p. 5.35), the independent variables are possible predictors of fibromyalgia disease status. The dependent variables represent the descriptors of fibromyalgia disease status. Relationships within the independent and

dependent variables respectively are expressed as correlations (Pearson coefficients), and predictive relationships between the dependent and independent variables as model/partial R-squares (calculated through regression analysis). In Table 1.1 and 1.2, only statistically significant correlations ($p \leq 0.05$) are indicated, together with the noteworthy model/partial R-squares. Since there are no HBDI results available for the controls, it was not possible to apply the model to the control group.

Table 1.1. *Pearson coefficient correlations* | r | *and statistical significance within the dependent and independent variables respectively*

Dependent variables	**r-value**	**p-value**
LF/HF ratio and FIQ anxiety	0.62	0.0130
LF/HF ratio and FIQ depression	0.66	0.0079
FIQ anxiety and FIQ pain	0.53	0.0429
FIQ depression and FIQ pain	0.49	0.0607†
FIQ depression and RCS symptoms	0.51	0.0507†
FIQ fatigue and FIQ depression	0.56	0.0312
FIQ anxiety and FIQ stiffness	0.58	0.024
FIQ rested and cortisol	- 0.55	0.0354
Independent variables	**r-value**	**p-value**
Quadrant A and Quadrant C	0.66	0.0077
Quadrant C and traumatic events	0.55	0.0351
Attachment-related avoidance and attachment-related anxiety	0.64	0.0099

Explanation: 'FIQ rested' refers to the scale on the FIQ assessing sleep quality (how rested patient feels after night's sleep); 'RCS symptoms' refer to the total number of symptoms on the RCS (calculated out of a total of 100 symptoms); Quadrant A – cerebral left; Quadrant C – limbic right. **Abbreviations**: LF/HF ratio, low-frequency/ high frequency ratio; RCS, Review of current symptoms questionnaire; FIQ, Fibromyalgia Impact Questionnaire
† indicates noteworthy correlations that is not statistically significant.

Table 1.2. *Predictive relationships (r^2) between the independent and dependent variables calculated through regression analysis*

Dependent variable	**Independent variable**	**Model R-square**
Total power (supine)	Quadrant A	0.5078
Total power (standing)	Quadrant A	0.4852
Low frequency (supine)	Quadrant A	0.5345
Low frequency (standing)	Quadrant A	0.4566
High frequency (supine)	Quadrant A	0.4154†
High frequency (standing)	Quadrant A	0.2164
Salivary cortisol level	Attachment-related avoidance	0.1782
Symptom score	Attachment-related anxiety	0.1467
Allergies	Traumatic events	0.4600
FIQ disability	Traumatic events	0.3435†

Explanation: When a specific independent variable is the only significant predictor of a dependent variable, their relationship is expressed in model R-squares; when there is more than one significant predictor, the relationship with the dependent variable is expressed as partial R-squares; 'symptom score' refer to the total number of symptoms on the RCS (calculated out of a total of 100 symptoms); Quadrant A – cerebral left. **Abbreviations**: RCS, Review of current symptoms questionnaire; FIQ, Fibromyalgia Impact Questionnaire
† indicates partial R-square

D. APPENDIX TO CHAPTER – INDIVIDUAL SUBJECT DATA

I. Patient group

Patient 1

1.1. Patient health questionnaire

1.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

1.1.2. Anthropometrical data

Gender: Female
Age: 49 yrs
Mass: 68 kg
Height: 1.64 m
Body mass index: 25.28

1.1.3. Medical background

Allergies: Hay fever
Current illnesses (apart from FM): None
Ongoing illnesses (age at which illness started in brackets): hypertension (age 24), thyroid problem (age unknown).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Tonsillectomy Tonsillectomy Bladder neck widening	3 yrs 9 yrs 25 yrs	Difficulty to find correct diagnosis for unexplained symptoms (FM) Because of wrong diagnosis, she only had 1 child. Bitterness towards ignorant doctors	-
Illnesses:			
Eating disorder	17 yrs		

Onset of FM: After a period of overexertion and major stress
Number of years suffering from FM: 31 yrs
FM progress: Improving
Description of pain: Continuous pain spread over whole body. Pain is intensified in joint areas. Pain caused by muscle stiffness.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Moderate exercise Heat Sunlight Sleep	Stress Humidity Caffeine Season

1.1.4. Treatment program

Exercise program
Physiotherapy
Pharmacological medication

Name of medication	Dose	Frequency
Ten Bloka	50 mg	1-2 per day
Topamax	75 mg	1-2 per day
Trepiline	75 mg	1 per day
Alchera	7.5 mg	0.5-1 per day
Tramal	-	-
Tramahexal	-	-
Eltroxin	0.1mg	1 per day
Livifem	-	-
Slow-Mag	-	-
Florinef	0.1 mg	1/ 48 hours

1.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Breast:**		**Joints:**		**Thyroid:**	
fatigue	3	lumps	3	ache/pain	3	cold or heat	
weight change	1	swollen	3	stiff	2	tolerance	1
fever/chills/sweats	1			swelling	1		
appetite change	2	**Lungs:**				**Neuropsychiatric:**	
abnormal thirst	3	cough	1	**G.U. and Hormonal:**		headache (moderate)	2
difficulty sleeping	2	shortness of breath		**(Female)**		depression/apathy	2
light-headed	3	- on exertion	3	severe menstrual		anxiety/irritable	2
		can't get full breath	3	cramps	1	"brain fog"/difficulty	
Skin:		hyperventilation	3	severe premenstrual		concentrating	2
itching	2	phlegm/mucus	1	cramps	1	mood swings	1
flushing	1	chest pain on		menstrual irregularity	1	numbness, tingling	2
rashes	1	exertion	3	yeast or candida			
hives	1	other chest pain or		infection	1	**Gastrointestinal:**	
dry/rough skin	2	distress	3	painful or difficult		blenching, bloating,	
acne	1	palpitations	3	urination	1	or passing gas	3
nail/hair problem	3	ankle swelling	2	pressure/urgency	1	heartburn or	
		sore tender legs	3			stomach pain	3
Eyes:				**Muscles:**		diarrhea	3
vision	3	**Mouth:**		tight/stiff	3	constipation	2
tearing	1	sores/fissures	3	ache-sore-pain		cramps or aches	3
feels heavy	3	herpes or frequent		- neck	3		
		cold sores	2	- shoulder	3	**Nose/Throat:**	
Ears:		gum/tooth problem	3	- upper back	3	sore throat	2
itching	2	tongue problem	3	- low back	3	postnasal drip	2
hearing problem	3			- extremities	2	trouble swallowing	2
blocked ears	3	**Lymph nodes:**		weakness	2		
ringing in ears	2	swollen	2				
dizziness/vertigo	3	sensitive	2				

1.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	5.75	Fatigue:	9.00
Days not feeling good:	7.15	Not rested:	4.00
Work missed:	1.43	Stiffness:	3.00
Inability to perform job tasks:	7.00	Anxiety:	1.00
Pain:	7.00	Depression:	2.00
Total FIQ score:	47.33		

1.4. ELISA

Cortisol level: 11.5 ng/ml

1.5. R-R interval recordings

1.5.1. Heart rate variability data: physical stressor

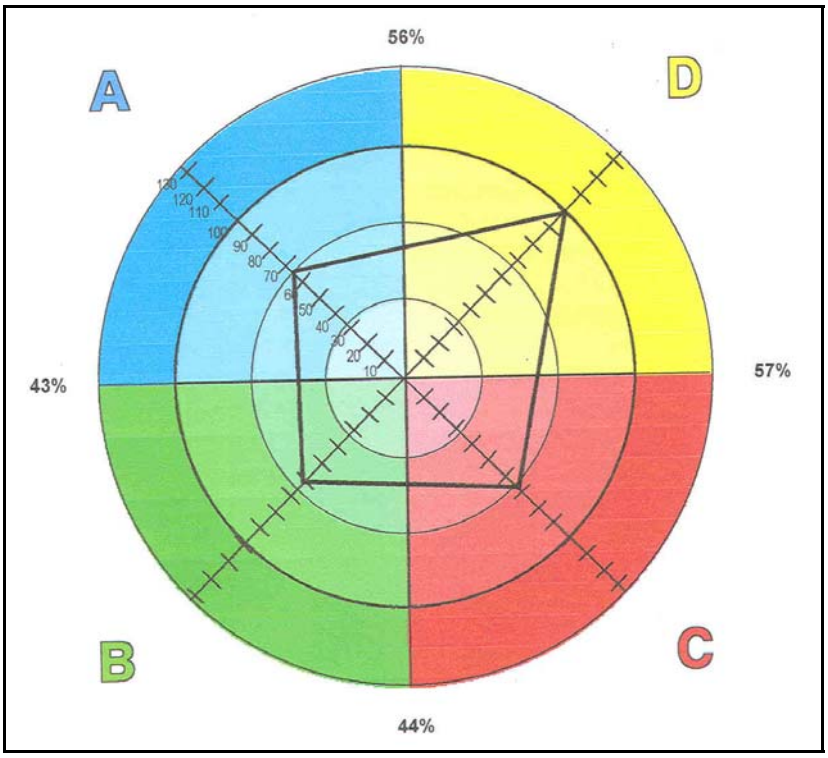
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.82	0.83	0.85
RR standard deviation (s)	0.03	0.01	0.02
Mean HR (1/min)	72.84	72.33	70.87
HR standard deviation (1/min)	2.57	1.31	2.06
Frequency domain results			
LF power (ms^2)	4.97	6.48	13.80
LF power n.u.	2.13	15.89	8.65
HF power (ms^2)	227.79	34.27	145.75
HF power n.u.	97.87	84.11	91.35
LF/HF ratio	0.02	0.19	0.09
Total power (ms^2)	232.99	43.65	161.74

1.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.86	0.86
RR standard deviation (s)	0.01	0.01
Mean HR (1/min)	69.58	70.05
HR standard deviation (1/min)	1.30	1.23
Frequency domain results		
LF power (ms^2)	11.29	24.25
LF power n.u.	23.13	47.58
HF power (ms^2)	37.53	26.72
HF power n.u.	76.87	52.42
LF/HF ratio	0.30	0.91
Total power (ms^2)	51.99	92.49

1.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 66, **B** 62, **C** 68, **D** 99.
Adjective pairs: **A** 5, **B** 3, **C** 10, **D** 6.
Preference code: 2-2-1-1

1.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 4.78
Avoidance score: 5.17
Attachment class: Fearful-avoidant

Patient 2

2.1. Patient health questionnaire

2.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 12
Work status: Never employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: Full

2.1.2. Anthropometrical data

Gender: Female
Age: 45 yrs
Mass: 60 kg
Height: 1.68 m
Body mass index: 21.3

2.1.3. Medical background

Allergies: Sulphar in antibiotics
Current illnesses (apart from FM): None
Ongoing illnesses (age at which illness started in brackets): Allergies (age 37), migraine headaches (age 23).

Operations and hospitalizations:	Age	Traumatic psychological events:	Age
Hysterectomy Ovarectomy	30 yrs 31 yrs	Traumatic school years (had a hard time to pass) Failed Grade 5 Wet bed Brother died from AIDS Unhappy marriage	7-19 yrs 12 yrs 7-19 yrs 45 yrs 19 +
Illnesses:			
Glandular fever	35 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 20 yrs
FM progress: More painful locations
Description of pain: Indescribable muscle pain.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Food: fresh fruit, vegetables Sleep	Exercise Stress Caffeine Cold Alcohol

2.1.4. Treatment program

Non-allopathic treatment: meditation, acupuncture
Pharmacological medication

Name of medication	Dose	Frequency
Zoloft	50 mg	2 per day
Topamax	75 mg	1 per day
Durogesic	25 µg/h	every 3rd day
Phenergan	25 mg	as needed
Buscopan	10 mg	as needed
Lentogesic	-	as needed

2.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Neuropsychiatric:**		**G.U. and hormonal:**	
fatigue	3	other chest pain or		headache (severe)	3	**(Female)**	
weight change	3	distress	1	depression/apathy	1	yeast or candida	
fever/chills/sweats	3	calf pain on		anxiety/irritable	2	infection	1
difficulty sleeping	2	exercise	3	"brain fog"/difficulty		painful or difficult	
light-headed	1	sore tender legs	2	concentrating	2	sexual problem	3
				numbness, tingling	2		
Eyes:		**Gastrointestinal:**				**Muscles:**	
itching	2	blenching,bloating		**Ears:**		tight/stiff	3
feels heavy	3	or passing gas	2	dizziness/vertigo	2	ache-sore-pain	
		heartburn or				- neck	3
Nose/Throat:		stomach pain	2	**Skin:**		- shoulder	3
stuffed/runny nose	1	diarrhea	2	itching	1	- upper back	3
sore throat	2	constipation	2			- low back	3
tight/swollen throat	1	cramps or aches	2	**Thyroid:**		weakness	1
trouble swallowing	1			tolerance	2		
						Breast:	
						swollen	1

2.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	5.75	Fatigue:	8.00
Days not feeling good:	8.58	Not rested:	8.00
Work missed:	10.01	Stiffness:	8.00
Inability to perform job tasks:	7.00	Anxiety:	6.00
Pain:	8.00	Depression:	4.00
Total FIQ score:	73.34		

2.4. ELISA

Cortisol level: 10.0 ng/ml

2.5. R-R interval recordings

2.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.96	0.89	0.86
RR standard deviation (s)	0.04	0.04	0.03
Mean HR (1/min)	62.68	67.86	69.83
HR standard deviation (1/min)	2.55	3.16	2.86
Frequency domain results			
LF power (ms^2)	255.20	158.15	301.79
LF power n.u.	44.75	21.73	52.39
HF power (ms^2)	315.05	569.76	274.23
HF power n.u.	55.25	78.27	47.61
LF/HF ratio	0.81	0.28	1.10
Total power (ms^2)	589.73	746.97	588.30

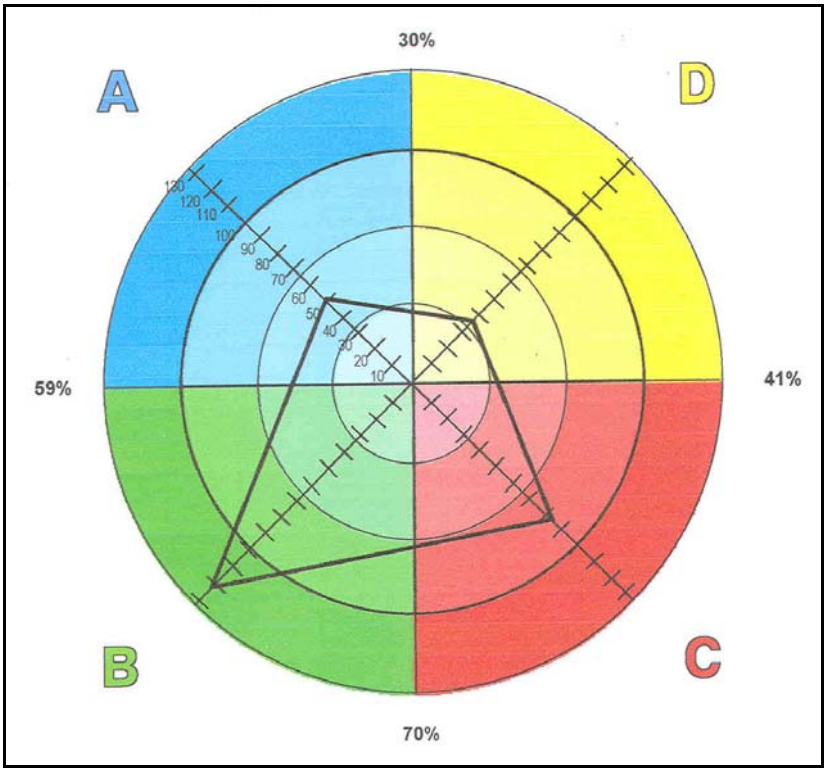
2.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.81	0.76
RR standard deviation (s)	0.03	0.04
Mean HR (1/min)	73.85	79.55
HR standard deviation (1/min)	2.52	3.76
Frequency domain results		
LF power (ms^2)	110.16	226.22
LF power n.u.	31.42	68.42
HF power (ms^2)	240.46	104.42
HF power n.u.	68.58	31.58
LF/HF ratio	0.46	2.17
Total power (ms^2)	358.61	404.07

2.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 51, **B** 123, **C** 84, **D** 36.
Adjective pairs: **A** 5, **B** 10, **C** 7, **D** 2.
Preference code: 2-1-1-2



2.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 3.94
Avoidance score: 5.33
Attachment class: Dismissing

Patient 3

3.1. Patient health questionnaire

3.1.1. Personal information

Marital status: Widowed
Highest academic qualification: Diploma
Work status: Employed (half day)
Lifestyle: Live with someone who can take care
Disability compensation: None

3.1.2. Anthropometrical data

Gender: Female
Mass: 75 kg
Body mass index: 25.55

Age: 52 yrs
Height: 1.65 m

3.1.3. Medical background

Allergies: Buscopan, Voltaren, Penicillin
Current illnesses (apart from FM): None
Ongoing illnesses (with the age at which illness started in brackets): migraine headaches (age 11).

Hospitalisations and operations:	Age	Traumatic psychological events:	Age
Hysterectomy	23 yrs	36 hours in labour	22 yrs
Blood transfusions	50 yrs	Father died of cancer	22 yrs
3 months in hospital because of wound infection	48 yrs	Mother committed suicide	25 yrs
		Husband died in fire - financial complications	38 yrs
Illnesses:		Hospitalised for depression	44 yrs
Rheumatic fever	7 yrs		
Meningitis	21,23		
Ear infection for 3 months	26 yrs		
Pneumonia	31,49		
Mental illness	34 yrs		
Bleeding disorder	50 yrs		
Tumor on ovaries	52 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 25 yrs
FM progress: Improving
Description of pain: Burning, intense pain.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Heat Sleep	Exercise Stress Humidity Season: winter Cold Time of day Food: sugar

3.1.4. Treatment program

Physiotherapy
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Tramal	150 mg	3-4 per day
Trepiline	10 mg	1 per day
Effexor	75 mg	1 per day
Duragesic	25 mg	1/96 hours
Magnesit	-	-
CalCVita	-	-
Vitamin B	-	-

3.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Skin:**		**Eyes:**		**Ears:**	
fatigue	3	flushing	2	vision	2	itching	1
weight change	2	dry/rough skin	3	tearing	1	hearing problem	1
fever/chills/sweats	3	acne	3	itching	1	blocked ears	1
appetite change	2	nail/hair problem	3	feels heavy	2	ringing in ears	1
abnormal thirst	2			allergic shiners	1	sensitive to sounds	2
difficulty sleeping	3					dizziness/vertigo	2
light-headed	2						

Lungs:		**Joints:**		**Genital-urinary:**	
cough	1	ache/pain	2	painful or difficult urination	2
wheezes	1	stiff	3		
shortness of breath		swelling	2		
- at rest	1				
- on exertion	1				
can't get full breath	2				
hyperventilation	1				
phlegm/mucus/ bronchitis	2				
chest pain on exertion	1				
other chest pain or distress	1				
palpitations/rapid, slow or irregular heart rate/rhythm	3				
ankle swelling	2				
calf pain on exercise	3				
sore tender legs	3				

Mouth:		**Muscles:**		**Lymph nodes:**		**Nose/Throat:**	
sores/fissures	2	tight/stiff	3	swollen	2	stuffed/runny nose	1
herpes or frequent cold sores	1	ache-sore-pain		sensitive	2	postnasal drip	2
gum/tooth problems	1	- neck	3			sore throat	2
tongue problem	1	- shoulder	3			tight/swollen throat	1
		- upper back	3			hoarse voice	1
		- low back	3			trouble swallowing	2
		weakness	2				

Breasts:	
lumps	1
cystic breasts	2

Thyroid:	
history of x-ray to neck	2

Neuropsychiatric:	
headache (mild/ moderate)	2
headache (severe)	2
depression/apathy	2
anxiety/irritable	2
"brain fog"/difficulty concentrating	3
mood swings	2
suicidal	1
numbness, tingling	2
faints/blackouts	1

Gastrointestinal:	
nausea	2
blenching, bloating, or passing gas	3
heartburn or stomach pain	3
diarrhea	2
constipation	2
cramps or aches	2
rectal pain or itching	1
blood or black stools	1

3.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	5.99	Fatigue:	8.00
Days not feeling good:	7.15	Not rested:	10.00
Work missed:	2.86	Stiffness:	8.00
Inability to perform job tasks:	9.00	Anxiety:	7.00
Pain:	10.00	Depression:	6.00
Total FIQ score:	74.00		

3.4. ELISA

Cortisol level: 10.0 ng/ml

3.5. R-R interval recordings

3.5.1 Heart rate variability data: physical stressor

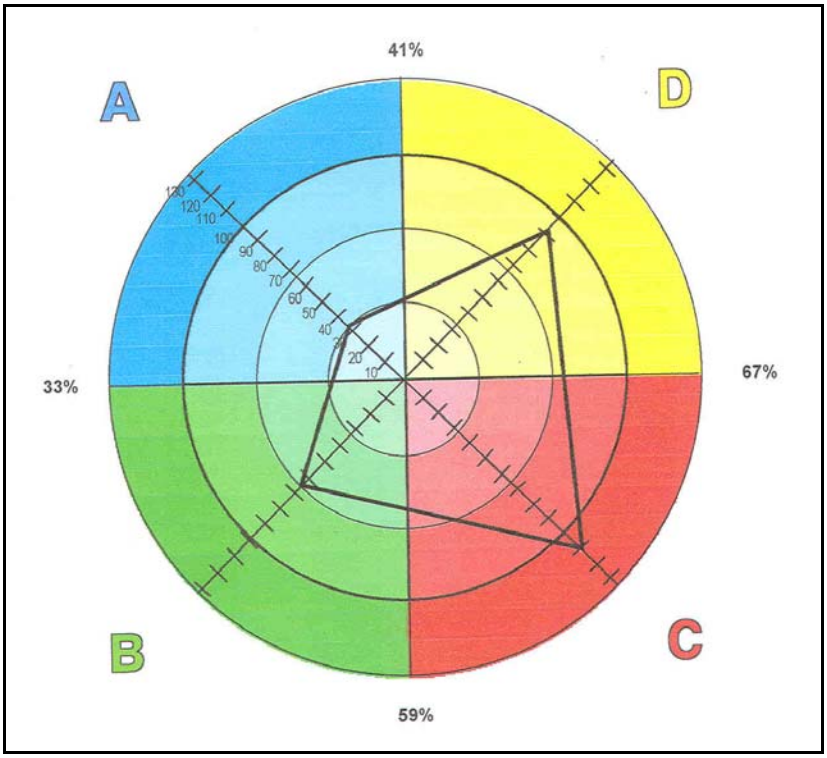
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.76	0.75	0.76
RR standard deviation (s)	0.01	0.02	0.04
Mean HR (1/min)	79.40	80.30	79.41
HR standard deviation (1/min)	1.24	2.16	2.47
Frequency domain results			
LF power (ms²)	38.10	10.58	41.53
LF power n.u.	77.39	27.74	64.62
HF power (ms²)	11.13	27.56	22.74
HF power n.u.	22.61	72.26	35.38
LF/HF ratio	3.42	0.38	1.83
Total power (ms²)	53.11	39.99	70.17

3.5.2. Heart rate variability data: psychological stressor

(recording discarded)

3.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 33, **B** 66, **C** 111, **D** 92.
Adjective pairs: **A** 3, **B** 6, **C** 9, **D** 6.
Preference code: 3-2-1-1

3.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 4.72
Avoidance score: 2.89
Attachment class: Preoccupied

Patient 4

4.1. Patient health questionnaire

4.1.1. Personal information

Marital status: Single
Highest academic qualification: Grade 12
Work status: Never employed
Lifestyle: Smokes 2 cigarettes a day
Occasionally uses alcohol
Disability compensation: None

4.1.2. Anthropometrical data

Gender: Female
Age: 21 yrs
Mass: 64 kg
Height: 1.65 m
Body mass index: 23.50

4.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): diabetes I
Ongoing illnesses from past (age at which illness started in brackets): diabetes (age 15), vaginitis (age 20).

Illnesses:	Age	Traumatic psychological events:	Age
Pneumonia	20 yrs	Diabetes are experienced as emotionally draining	15 +

Onset of FM: After a period of overexertion and psychological stress. FM complaints started gradually.
Number of years suffering from FM: 3 yrs
FM progress: Improving
Description of pain: Continuous aches, cramps and pain. Burning pain in hands and feet.
Fulfillment of Fukuda CFS diagnostic criteria: No

Factors relieving symptoms:	Factors increasing symptoms:
Exercise Sunlight Sleep	Stress Humidity Caffeine Season: winter Barometric pressure Cold Heat Time of day: mornings

4.1.4. Treatment program

Physiotherapy
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Tramal	100 mg	2 per day
Trepiline	12 mg	when needed

4.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Neuropsychiatric:**	
fatigue	3	ankle swelling	3	ache/pain	2	headache (mild/ moderate)	1
difficulty sleeping	2	sore tender legs	2	stiff	3	depression/apathy	1
light-headed	1					"brain fog"/difficulty concentrating	1
		Lymph nodes:				mood swings	1
Skin:		swollen	1	**G.U. and hormonal:**			
dry/rough skin	2	sensitive	2	**(Female)**			
nail/hair problem	1			menstrual irregularity	3		
		Gastrointestinal:		frequent vaginal discharge	2	**Eyes:**	
Muscles:		blenching, bloating or passing gas	3	yeast or candida infection	3	feels heavy	2
tight/stiff	3	heartburn or stomach pain	2			**Ears:**	
ache-sore-pain		diarrhea	2			dizziness/vertigo	1
- neck	3						
- shoulder	3						
- upper back	3						
- low back	2						

4.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.33	Fatigue:	8.00
Days not feeling good:	2.86	Not rested:	9.00
Work missed:	1.43	Stiffness:	4.00
Inability to perform job tasks:	3.00	Anxiety:	1.00
Pain:	4.00	Depression:	2.00
Total FIQ score:	35.62		

4.4. ELISA

Cortisol level: 6.5 ng/ml

4.5. R-R interval recordings

4.5.1. Heart rate variability data: physical stressor

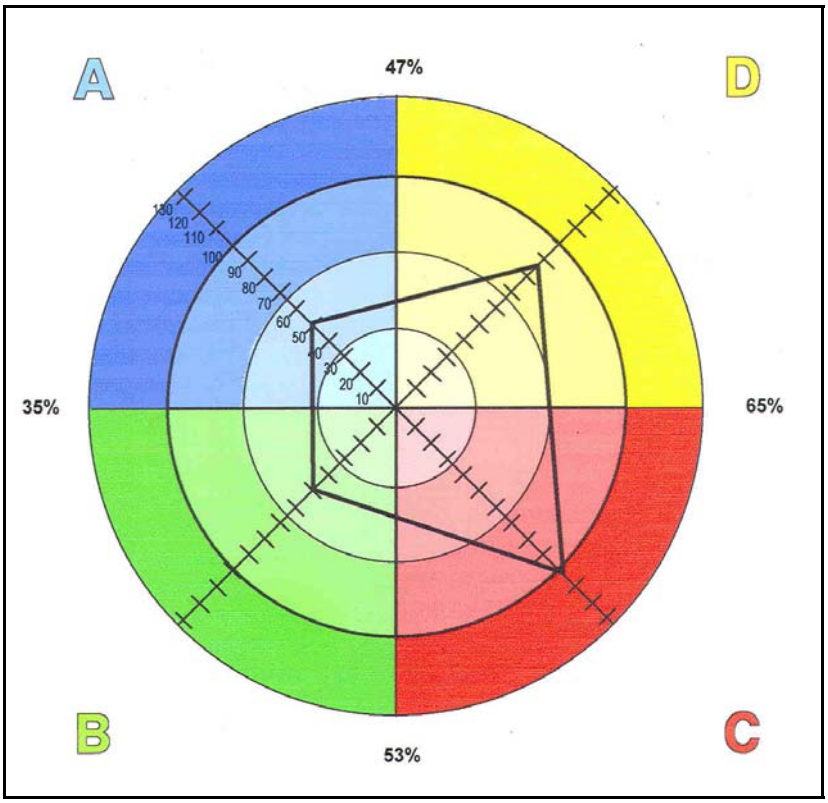
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.62	0.61	0.60
RR standard deviation (s)	0.00	0.00	0.00
Mean HR (1/min)	96.55	98.49	100.79
HR standard deviation (1/min)	0.54	0.70	0.50
Frequency domain results			
LF power (ms^2)	0.92	1.92	0.52
LF power n.u.	33.33	70.78	45.35
HF power (ms^2)	1.83	0.79	0.63
HF power n.u.	66.67	29.22	54.65
LF/HF ratio	0.50	2.42	0.83
Total power (ms^2)	3.38	2.99	1.61

4.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.72	0.71
RR standard deviation (s)	0.01	0.01
Mean HR (1/min)	83.68	84.97
HR standard deviation (1/min)	1.04	0.89
Frequency domain results		
LF power (ms^2)	6.08	7.55
LF power n.u.	48.37	50.53
HF power (ms^2)	6.49	7.39
HF power n.u.	51.63	49.47
LF/HF ratio	0.94	1.02
Total power (ms^2)	15.26	16.60

4.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 51, **B** 50, **C** 102, **D** 86.
Adjective pairs: **A** 5, **B** 4, **C** 9, **D** 5.
Preference code: 2-2-1-1

4.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 4.67
Avoidance score: 3.28
Attachment class: Preoccupied

Patient 5

5.1. Patient health questionnaire

5.1.1. Personal information

Marital status: Married
Highest academic qualification: Honours degree
Work status: Employed (half day)
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

5.1.2. Anthropometrical data

Gender: Male
Age: 35 yrs
Mass: 102 kg
Height: 1.74 m
Body mass index: 33.69

5.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): None
Ongoing illnesses from past (age at which illness started in brackets): allergies (age 5), hypertension (age 11), migraine headaches (age 5).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Hospitalised after rugby match	28 yrs	Psychological stressor (confidentional)	7 yrs
Illnesses:			
Stomach ulcer	27 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 8 yrs
FM progress: Improving
Description of pain: Muscular stiffness leads to headache
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Exercise	Alcohol Stress Humidity Time of day: late afternoon

5.1.4. Treatment program

Exercise program
Physiotherapy
Pharmacological medication

Name of medication	Dose	Frequency
Lantanon	30 mg	1 per day
Cipramil	60 mg	1 per day
Dixarit	-	1 per day
Alluretic	12.5 mg	1 per day

5.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Eyes:**		**Lungs:**		**Nose/Throat:**	
fatigue	2	vision	2	shortness of breath		stuffed/runny nose	3
weight change	1	tearing	2	- on exertion	2	postnasal drip	2
fever/chills/sweats	2	itching	1	phlegm/mucus/		sore throat	1
appetite change	1	feels heavy	2	bronchitis	1	tight/swollen throat	1
abnormal thirst	3			ankle swelling	2		
difficulty sleeping	3	**Ears:**		calf pain on		**Muscles:**	
light-headed	1	itching	2	exercise	3	tight/stiff	3
		hearing problem	1	high blood pressure	3	ache-sore-pain	
Neuropsychiatric:		blocked ears	2			- neck	3
headache (severe)	3	ringing in ears	2	**Gastrointestinal:**		- shoulder	3
depression/apathy	3	sensitive to sounds	3	blenching, bloating,		- low back	3
anxiety/irritable	3	dizziness/vertigo	1	or passing gas	2		
difficulty				heartburn or		**Skin:**	
concentrating	3	**Joints:**		stomach pain	2	rashes	2
mood swings	1	stiff	2			dry/rough skin	2
suicidal	1	swelling	2			acne	1
						nail/hair problem	1

5.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	3.33	Fatigue:	6.00
Days not feeling good:	2.86	Not rested:	10.00
Work missed:	0.00	Stiffness:	8.00
Inability to perform job tasks:	6.00	Anxiety:	7.00
Pain:	7.00	Depression:	4.00
Total FIQ score:	54.19		

5.4. ELISA

Cortisol level: 4.5 ng/ml

5.5. R-R interval recordings

5.5.1. Heart rate variability data: physical stressor

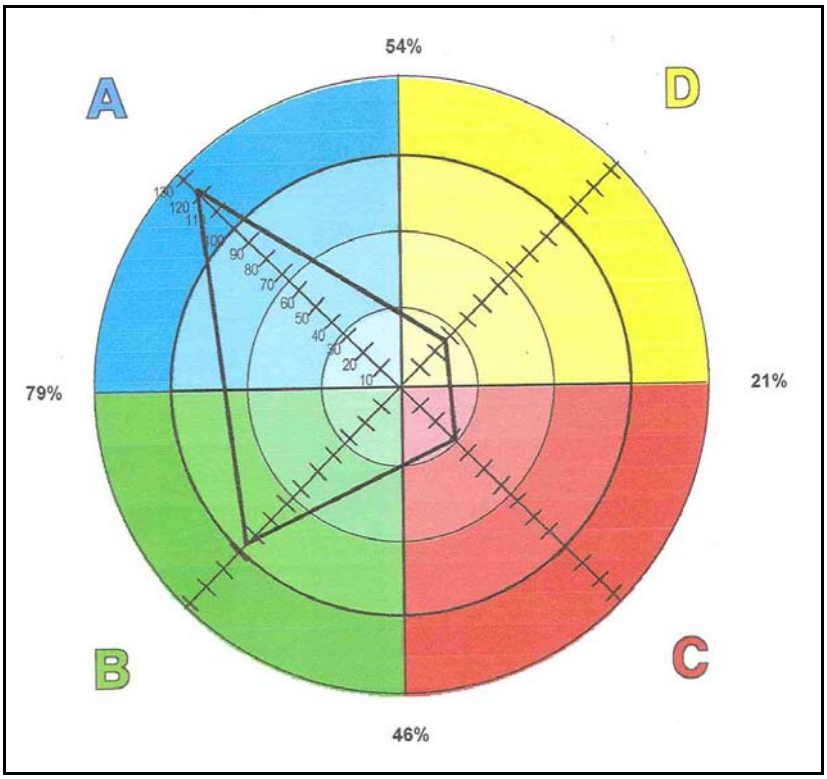
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.09	0.85	0.86
RR standard deviation (s)	0.07	0.04	0.05
Mean HR (1/min)	55.75	70.79	69.89
HR standard deviation (1/min)	4.82	3.30	4.17
Frequency domain results			
LF power (ms²)	1224.40	298.22	891.75
LF power n.u.	46.53	73.50	85.56
HF power (ms²)	1407.30	107.50	150.47
HF power n.u.	53.48	26.50	14.44
LF/HF ratio	0.87	2.77	5.93
Total power (ms²)	2776.54	434.73	1091.71

5.5.2. Heart rate variability data: psychological stressor

(recording discarded)

5.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 123, **B** 95, **C** 32, **D** 26.
Adjective pairs: **A** 11, **B** 9, **C** 3, **D** 1.
Preference code: 1-1-3-3

5.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 3.5
Avoidance score: 4.0
Attachment class: Secure

Patient 6

6.1. Patient health questionnaire

6.1.1. Personal information

Marital status: Divorced
Highest academic qualification: Grade 12
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Disability compensation: None

6.1.2. Anthropometrical data

Gender: Female
Age: 55 yrs
Mass: 74 kg
Height: 1.6 m
Body mass index: 28.9

6.1.3 Medical background

Allergies: Flagyl in antibiotics
Current illnesses (apart from FM): low blood sugar, hypothyroidism
Ongoing illnesses from past (age at which illness started in brackets): allergies (age 50), arthritis (age 25), hypertension (age 43), high cholesterol (age 52), migraine headaches (age 13), thyroid problem (age 53).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Hospitalised for severe headaches	18 yrs	Molested	4 yrs
		Miscarriage	22 yrs
Appendicectomy (emergency)	23 yrs	Unhappy marriage	21-54
Hysterectomy	31 yrs	Son admits homosexuality	51 yrs
Gall bladder removed	35 yrs	Father died of cancer	55 yrs
Knee operation	39 yrs		
Sleep therapy	42 yrs		
Neck operation	47 yrs		
Knee replacement	48 yrs		
Accident	54 yrs		
Illnesses:			
Stomach ulcer	22 yrs		
Non-cancerous breast disease	35 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 41 yrs
FM progress: More painful locations, higher pain intensity.
Description of pain: Feel as if head are crushed/ is going to explode.

Fulfillment of Fukuda CFS diagnostic criteria: Yes

6.1.4. Treatment program

Pharmacological medication

Name of medication	Dose	Frequency
Estrofem	4 mg	1 per day
Eltroxin	1 mg	2 per day
Trepiline	-	-
Prozak	-	-
Rivotril	0.5 mg	1 per day
Oxypan	10 mg	1 per day
Ten Bloka	100 mg	1 per day
Adelat	30 mg	1 per day
Buscopan	10 mg	when needed

6.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Breast:**		**Joints:**		**Thyroid:**	
fatigue	3	lumps	2	ache/pain	3	cold or heat tolerance	3
fever/chills/sweats	3	cystic breasts	2	stiff	3	history of x-ray to neck	3
appetite change	1	discharge	3	swelling	2		
abnormal thirst	3						
difficulty sleeping	3	**Lungs:**		**Genital-urinary:**			
light-headed	2	cough	1	**(Female)**		**Neuropsychiatric:**	
		wheezes	1	yeast or candida infection	2	headache (mild/ moderate)	3
Skin:		shortness of breath		painful or difficult urination	3	headache (severe)	3
itching	2	- at rest	1	pressure/urgency/ itching	1	depression/apathy	2
rashes	2	- on exertion	2			anxiety/irritable	2
dry/rough skin	2	can't get full breath	2	**Muscles:**		hyperactive	2
nail/hair problem	2	phlegm/mucus/ bronchitis	1	tight/stiff	3	"brain fog"/difficulty concentrating	2
Eyes:		chest pain on exertion	1	ache-sore-pain		mood swings	2
vision	2	other chest pain or distress	1	- neck	3	numbness, tingling	2
itching	1	palpitations/rapid, slow or irregular heart rate/rhythm	2	- shoulder	3	faints/blackouts	1
feels heavy	3	ankle swelling	1	- low back	3		
		calf pain on Exercise	3	weakness	3	**Gastrointestinal:**	
Ears:		sore tender legs	1			nausea	2
hearing problem	1	high blood pressure	3	**Mouth:**		blenching, bloating, or passing gas	3
ringing in ears	3			sores/fissures	2	heartburn or stomach pain	3
dizziness/vertigo	2	**Lymph nodes:**		herpes or frequent cold sores	2	constipation	3
		swollen	2	gum/tooth problems	2	cramps or aches	2
Nose/Throat:		sensitive	2			rectal pain or itching	1
stuffed/runny nose	2					blood or black stools	1
postnasal drip	3						
sore throat	1						
hoarse voice	2						

Factors relieving symptoms:	Factors increasing symptoms:
Sleep	Stress Alcohol Humidity Heat Sunlight Food: Sugar Time of day: afternoon

6.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	5.99	Fatigue:	8.00
Days not feeling good:	10.01	Not rested:	8.00
Work missed:	2.86	Stiffness:	8.00
Inability to perform job tasks:	9.00	Anxiety:	6.00
Pain:	9.00	Depression:	6.00
Total FIQ score:	72.86		

6.4. ELISA

Cortisol level: 7.5 ng/ml

6.5. R-R interval recordings

6.5.1. Heart rate variability data: physical stressor

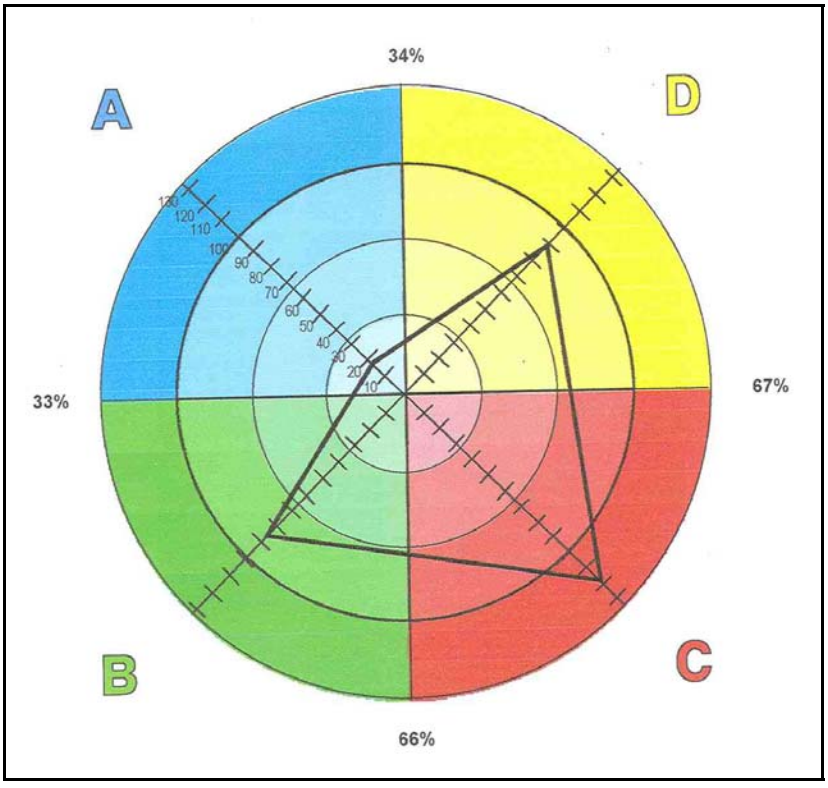
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.88	0.95	0.97
RR standard deviation (s)	0.01	0.02	0.02
Mean HR (1/min)	67.84	63.10	62.19
HR standard deviation (1/min)	1.08	1.53	1.49
Frequency domain results			
LF power (ms^2)	14.46	39.01	27.01
LF power n.u.	18.30	29.79	22.24
HF power (ms^2)	64.55	91.94	94.42
HF power n.u.	81.70	70.21	77.76
LF/HF ratio	0.22	0.42	0.29
Total power (ms^2)	80.48	138.34	126.44

6.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	1.04	0.96
RR standard deviation (s)	0.02	0.02
Mean HR (1/min)	57.50	62.39
HR standard deviation (1/min)	1.54	1.43
Frequency domain results		
LF power (ms²)	37.02	54.41
LF power n.u.	19.46	34.21
HF power (ms²)	153.23	104.64
HF power n.u.	80.54	65.79
LF/HF ratio	0.24	0.52
Total power (ms²)	209.22	176.24

6.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 18, **B** 86, **C** 119, **D** 89.
Adjective pairs: **A** 2, **B** 4, **C** 10, **D** 8.
Preference code: 3-1-1-1

6.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 3.94
Avoidance score: 4.33
Attachment class: Dismissing

Patient 7

7.1. Patient health questionnaire

7.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 12
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

7.1.2. Anthropometrical data

Gender: Female
Age: 48 yrs
Mass: 78 kg
Height: 1.78 m
Body mass index: 24.61

7.1.3 Medical background

Allergies: Hay fever
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): allergies (age 5), arthritis (age 47), hypertension (age 35), migraine headaches (age 18), mental illness (age 21).

Operations and hospitalisations:	Age	Illnesses:	Age
Shock therapy for depression	29,48	Rheumatic fever Kidney disease	child 19 yrs
Psychological trauma	Age		
Great psychological stressor (confidential)	± 20		

Onset of FM: Following a great psychological stressor
Number of years suffering from FM: 28 yrs
FM progress: Higher pain intensity
Description of pain: Feel as if brain is too big for scull.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Sleep	Stress Exercise Alcohol Humidity Heat Caffeine Season Cold Time of day: late morning/afternoon

7.1.4. Treatment program

Physiotherapy
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Trepiline	25 mg	4 per day
Aropax	60 mg	3 per day
Zopimed	7.5 mg	1 per day
Alzam	0.5 mg	2 when needed
Mobic	7.5 mg	1 per day

7.2. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	4.54	Fatigue:	9.00
Days not feeling good:	5.72	Not rested:	9.00
Work missed:	7.15	Stiffness:	8.00
Inability to perform job tasks:	5.00	Anxiety:	8.00
Pain:	9.00	Depression:	9.00
Total FIQ score:	74.41		

7.3. ELISA
Cortisol level: 6.5 ng/ml

7.4. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Breast:**		**Joints:**		**Thyroid:**	
fatigue	3	lumps	2	ache/pain	2	mass or lump in neck	1
weight change	2	cystic breasts	1	stiff	2	cold or heat	
fever/chills/sweats	1	discharge	1	swelling	1	tolerance	3
appetite change	2	swollen	3			history of x-ray to	
abnormal thirst	3			**G.U. and hormonal:**		neck	2
difficulty sleeping	3	**Lungs:**		**(Female)**			
light-headed	2	cough	1	herpes	1	**Neuropsychiatric:**	
		wheezes	1	frequent vaginal		headache (mild/	
Skin:		shortness of breath		discharge	1	moderate)	3
itching	1	- at rest	1	yeast or candida		headache (severe)	3
flushing	3	- on exertion	3	infection	2	depression/apathy	3
rashes	1	can't get full breath	1	painful or difficult		anxiety/irritable	3
hives	1	hyperventilation	1	urination	1	hyperactive	1
dry/rough skin	3	phlegm/mucus/		pressure/urgency/		learning disability	1
acne	2	bronchitis	1	itching	1	"brain fog"/difficulty	
nail/hair problem	1	chest pain on		vaginal rash	3	concentrating	3
		exertion	1	sexual problem	3	mood swings	3
Eyes:		other chest pain or				suicidal	2
vision	2	distress	1	**Muscles:**		homicidal	1
tearing	1	palpitations/rapid,		tight/stiff	3	numbness, tingling	3
itching	2	slow or irregular		ache-sore-pain		faints/blackouts	1
feels heavy	3	heart rate/rhythm	2	- neck	3	seizures/convulsions	1
		ankle swelling	1	- shoulder	3		
Ears:		calf pain on		- upper back	3	**Gastrointestinal:**	
itching	1	exercise	1	- low back	3	nausea	1
hearing problem	1	sore tender legs	2	weakness	3	blenching, bloating,	
blocked ears	2	high blood pressure	2			or passing gas	3
ringing in ears	1			**Nose/Throat:**		heartburn or	
sensitive to sounds	2	**Mouth:**		stuffed/runny nose	2	stomach pain	1
dizziness/vertigo	2	sores/fissures	1	postnasal drip	3	diarrhea	1
		herpes or frequent		sore throat	1	constipation	2
Lymph nodes:		cold sores	1	tight/swollen throat	1	cramps or aches	1
swollen	1	gum/tooth problems	1	hoarse voice	3	rectal pain or itching	1
sensitive	1	tongue problem	3	trouble swallowing	1	blood or black stools	1
						worms or parasites	1

7.5. R-R interval recordings

7.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.73	0.70	0.68
RR standard deviation (s)	0.01	0.01	0.01
Mean HR (1/min)	82.51	86.01	88.20
HR standard deviation (1/min)	2.30	2.27	1.26
Frequency domain results			
LF power (ms^2)	32.66	70.72	14.28
LF power n.u.	83.67	85.64	72.23
HF power (ms^2)	6.37	11.86	5.49
HF power n.u.	16.33	14.36	27.77
LF/HF ratio	5.12	5.97	2.60
Total power (ms^2)	49.39	97.99	22.34

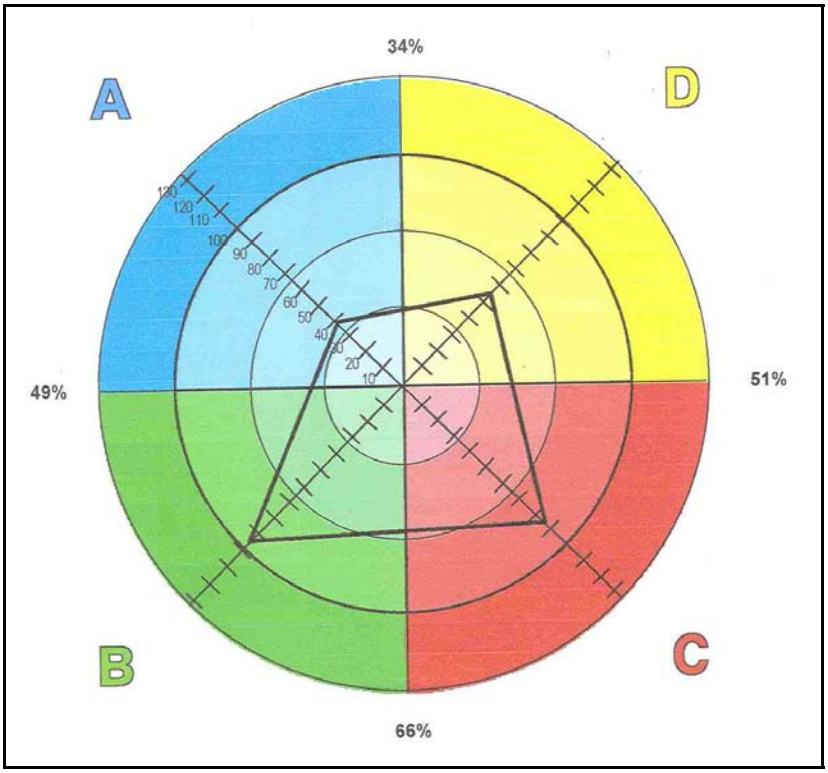
7.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.65	0.65
RR standard deviation (s)	0.01	0.01
Mean HR (1/min)	92.62	92.23
HR standard deviation (1/min)	1.71	1.93
Frequency domain results		
LF power (ms^2)	36.67	33.24
LF power n.u.	90.08	84.45
HF power (ms^2)	4.04	6.12
HF power n.u.	9.92	15.55
LF/HF ratio	9.08	5.43
Total power (ms^2)	48.41	42.44

7.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 38, **B** 95, **C** 86, **D** 54.
Adjective pairs: **A** 2, **B** 7, **C** 11, **D** 4.
Preference code: 2-1-1-2



7.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 3.17
Avoidance score: 3.39
Attachment class: Secure

Patient 8

8.1. Patient health questionnaire

8.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

8.1.2. Anthropometrical data

Gender: Female
Mass: 70 kg
Body mass index: 23.67
Age: 33 yrs
Height: 1.72 m

8.1.3 Medical background

Allergies: Hay fever
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): allergies (age 30), migraine headaches (age 31), endometriosis (age 27).

Illnesses:	Age	Traumatic psychological events:	Age
Bilharzia	22 yrs	House burnt down Sister (living with patient) in serious motor car accident Marital problems	22 yrs 22 yrs 23,30

Onset of FM: Following an illness and great psychological stressors occurring in short succession.
Number of years suffering from FM: 12 yrs
FM progress: More painful locations, higher pain intensity
Description of pain: Continuous pain spread over whole body.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Sleep	Stress Exercise Alcohol Humidity Caffeine Time of day: early morning, late afternoon

8.1.4. Treatment program

Exercise program
Physiotherapy
Pharmacological medication

Name of medication	Dose	Frequency
Tramal	-	1 per day

8.2. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	4.24	Fatigue:	0.50
Days not feeling good:	8.58	Not rested:	7.00
Work missed:	2.86	Stiffness:	8.00
Inability to perform job tasks:	4.00	Anxiety:	2.00
Pain:	4.00	Depression:	1.00
Total FIQ score:	42.18		

8.3. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Breast:**		**Joints:**		**Neuropsychiatric:**	
fatigue	1	discharge	2	ache/pain	1	headache (mild/ moderate)	1
weight change	2						
fever/chills/sweats	2	**Lungs:**		**Muscles:**		headache (severe)	3
difficulty sleeping	2	shortness of breath - on exertion	2	tight/stiff	3	anxiety/irritable	2
				ache-sore-pain		"brain fog"/difficulty concentrating	2
Skin:		calf pain on Exercise	2	- neck	3		
itching	2			- shoulder	3	mood swings	2
rashes	2			- upper back	3		
acne	2	**Nose/Throat:**		- low back	3	**Gastrointestinal:**	
nail/hair problem	3	stuffed/runny nose	3			nausea	1
		postnasal drip	2	**Ears:**		heartburn or stomach pain	3
Eyes:				blocked ears	2		
tearing	2	**Mouth:**		ringing in ears	2	constipation	2
feels heavy	3	gum/tooth problems	3	sensitive	2		

8.4. ELISA

Cortisol level: 10.5 ng/ml

8.5. R-R interval recordings

8.5.1. Heart rate variability data: physical stressor

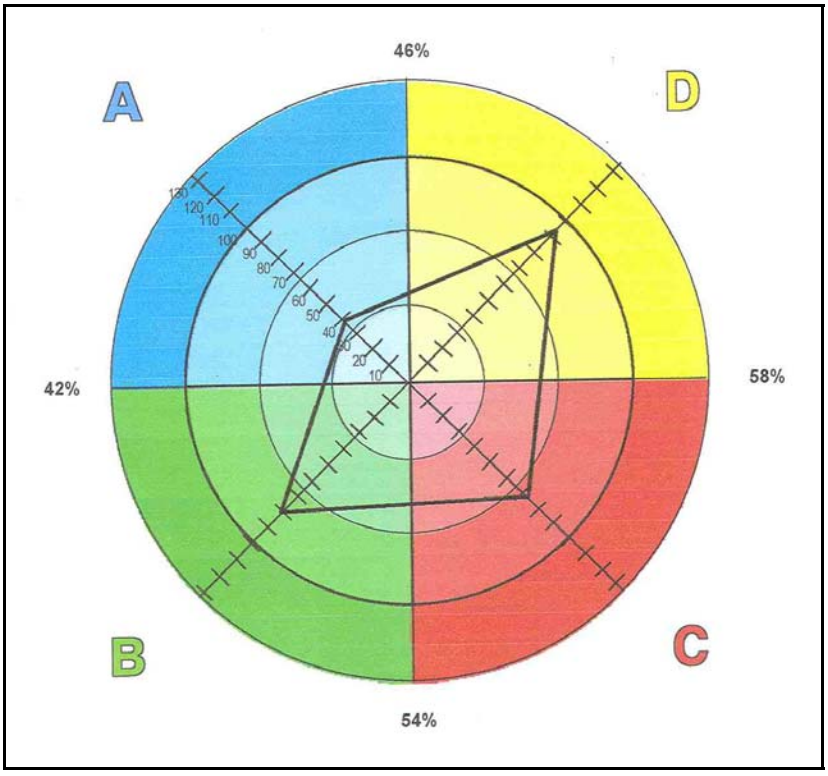
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.77	0.71	0.71
RR standard deviation (s)	0.03	0.05	0.04
Mean HR (1/min)	77.72	84.46	84.78
HR standard deviation (1/min)	3.45	5.82	4.88
Frequency domain results			
LF power (ms^2)	214.10	942.97	306.89
LF power n.u.	36.64	84.31	52.89
HF power (ms^2)	370.31	175.44	273.34
HF power n.u.	63.36	15.69	47.11
LF/HF ratio	0.58	5.38	1.12
Total power (ms^2)	602.99	1158.64	615.73

8.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.84	0.82
RR standard deviation (s)	0.03	0.02
Mean HR (1/min)	71.67	73.46
HR standard deviation (1/min)	3.07	2.66
Frequency domain results		
LF power (ms²)	218.82	72.79
LF power n.u.	62.23	43.47
HF power (ms²)	132.82	94.66
HF power n.u.	37.77	56.53
LF/HF ratio	1.65	0.77
Total power (ms²)	408.77	172.69

8.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 38, **B** 81, **C** 74, **D** 93.
Adjective pairs: **A** 4, **B** 8, **C** 5, **D** 7.
Preference code: 2-1-1-1

8.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.56
Avoidance score: 2.34
Attachment class: Secure

Patient 9

9.1. Patient health questionnaire

9.1.1. Personal information

Marital status: Divorced
Highest academic qualification: Grade 12
Work status: Not employed
Lifestyle: Smoked 2 packs for past 13 yrs
Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

9.1.2. Anthropometrical data

Gender: Male
Age: 40 yrs
Mass: 90 kg
Height: 1.78 m
Body mass index: 28.41

9.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): migraine headaches (age 20), hypertension (age 24), thyroid problem (age unknown).

Operations and hospitalisations:	Age (yrs)	Traumatic psychological events:	Age (yrs)
Hospitalised in psychiatric hospital for depression	38,39,40	Father alcoholic Father died Psychological trauma (confidential) Divorce Suicide attempt	child child ± 35 39 40
Illnesses:			
Stomach ulcer	38		

Onset of FM: Following a great psychological stressor
Number of years suffering from FM: 5 yrs
FM progress: No change
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Exercise Cold Sleep	Stress Humidity Sunlight Heat

9.1.4. Treatment program

Exercise program
Physiotherapy
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Nizac	20 mg	2 per day
Xanor	0.5 mg	4 per day
Atarax	25 mg	3 per day

9.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Muscles:**		**Thyroid:**	
fatigue	3	hyperventilation	2	ache-sore-pain		history of x-ray to	
weight change	1	phlegm/mucus/		- upper back	3	neck	3
fever/chills/sweats	2	bronchitis	1	- neck	2		
appetite change	1	chest pain on		- low back	3	**Neuropsychiatric:**	
abnormal thirst	2	exertion	3	weakness	3	depression	3
difficulty sleeping	3	other chest pain or				anxiety/ irritable	3
light-headed	2	distress	2	**Lymph nodes:**		headache (severe)	3
		palpitations/rapid,		swollen	1	learning disability	3
Skin:		slow or irregular		sensitive	1	"brain fog"/difficulty	
itching	1	heart rate/rhythm	1			concentrating	3
flushing	1	ankle swelling	1	**Gastrointestinal:**		mood swings	3
rashes	1	sore tender legs	2	heartburn	3	suicidal	3
hives	1			nausea	3		
dry/rough skin	1	**Eyes:**		rectal pain/itching	3	**Ears:**	
acne	1	vision	1	diarrhea	2	sensitive to sound	1
hair problem	2	feels heavy	1	cramps and aches	2	dizziness/vertigo	3
Nose/Throat:						**Mouth:**	
postnasal drip	3					gum/ tooth problem	1
						tongue problem	1

9.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	5.83	Fatigue:	10.00
Days not feeling good:	10.01	Not rested:	10.00
Work missed:	10.01	Stiffness:	6.00
Inability to perform job tasks:	10.00	Anxiety:	10.00
Pain:	6.00	Depression:	10.00
Total FIQ score:	87.85		

9.4. ELISA
Cortisol level: 9.0 ng/ml

9.5. R-R interval recordings

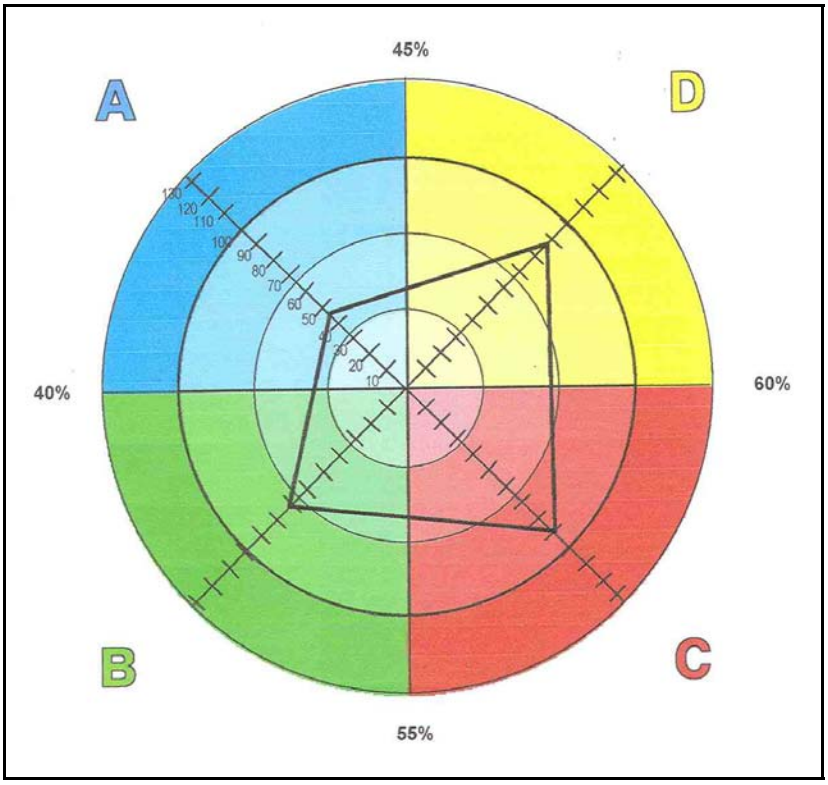
9.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.73	0.70	0.84
RR standard deviation (s)	0.01	0.02	0.03
Mean HR (1/min)	81.81	86.42	71.67
HR standard deviation (1/min)	1.69	2.31	3.07
Frequency domain results			
LF power (ms^2)	44.55	111.15	218.82
LF power n.u.	72.36	84.43	62.23
HF power (ms^2)	17.02	20.50	132.82
HF power n.u.	27.64	15.57	37.77
LF/HF ratio	2.62	5.42	1.65
Total power (ms^2)	63.18	148.15	408.77

9.5.2. Heart rate variability data: psychological stressor
(recording discarded)

9.6. Herrmann Brain Dominance Instrument
*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 45, **B** 72, **C** 90, **D** 87.
Adjective pairs: **A** 4, **B**5, **C** 9, **D** 6.
Preference code: 2-1-1-1



9.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 5.33
Avoidance score: 2.67
Attachment class: Preoccupied

Patient 10

10.1. Patient health questionnaire

10.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 12
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

10.1.2. Anthropometrical data

Gender: Female
Age: 63 yrs
Mass: 62 kg
Height: 1.62 m
Body mass index: 23.62

10.1.3 Medical background

Allergies: penicillin, sulphar.
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): arthritis (age 27), high cholesterol (age 45), migraine headaches (age 48).

Operations and hospitalisations:	Age
Hysterectomy	39 yrs
Neck fusion	50,51
Knee replacement	62 yrs

Onset of FM: Gradually
Number of years suffering from FM: 21 yrs
FM progress: More painful locations
Description of pain: Continuous pain spread over whole body.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Exercise	Stress
Heat	Alcohol
Sunlight	Humidity
Sleep	Caffeine
Barometric pressure	Season: winter
	Cold

10.1.4. Treatment program

Exercise program
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Trepiline	10 mg	1 per day
Zopimed	7.5 mg	1 per day
Slowmag	-	2 per day
Cal-C-Vita	-	1 per day
Caltrate	-	1 per day
Estro-pause	2 mg	1 per day
Lipitor	10 mg	1 per day

10.2. Review of current symptoms – questionnaire
(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Neuropsychiatric:**	
fatigue	3	palpitations/rapid heart rate/rhythm	2	ache/pain	3	headache (mild/ moderate)	3
weight change	2	calf pain on exercise	2	stiff	3	headache (severe)	3
fever/chills/sweats	1	sore tender legs	2	**Genital-urinary:**		anxiety/irritable	1
appetite change	1	**Ears:**		**(Female)**		difficulty concentrating	2
abnormal thirst	2	itching	2	pressure/urgency/ itching	2	numbness, tingling	3
insomnia	3	hearing problem	1	sexual problem	3	**Gastrointestinal:**	
light-headed	2	dizziness/vertigo	1	**Muscles:**		bloating or passing gas	2
Skin:		**Nose/Throat:**		tight/stiff	3	heartburn or stomach pain	1
itching	1	postnasal drip	1	ache-sore-pain		constipation	3
nail/hair problem	3	sore throat	1	- neck	3		
Eyes:				- shoulder	3		
vision	1			- upper back	3		
itching	1			- low back	2		
				weakness	2		

10.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	3.03	Fatigue:	8.00
Days not feeling good:	7.15	Not rested:	7.00
Work missed:	2.86	Stiffness:	7.00
Inability to perform job tasks:	7.00	Anxiety:	4.00
Pain:	8.00	Depression:	4.00
Total FIQ score:	58.04		

10.4. ELISA
Cortisol level: 16.5 ng/ml

10.5. R-R interval recordings

10.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.06	0.97	0.99
RR standard deviation (s)	0.07	0.03	0.04
Mean HR (1/min)	56.92	62.33	60.70
HR standard deviation (1/min)	3.84	2.96	2.96
Frequency domain results			
LF power (ms^2)	520.86	388.93	200.01
LF power n.u.	21.77	80.72	23.22
HF power (ms^2)	1871.95	92.92	661.41
HF power n.u.	78.23	19.28	76.78
LF/HF ratio	0.28	4.19	0.30
Total power (ms^2)	2408.88	564.76	910.65

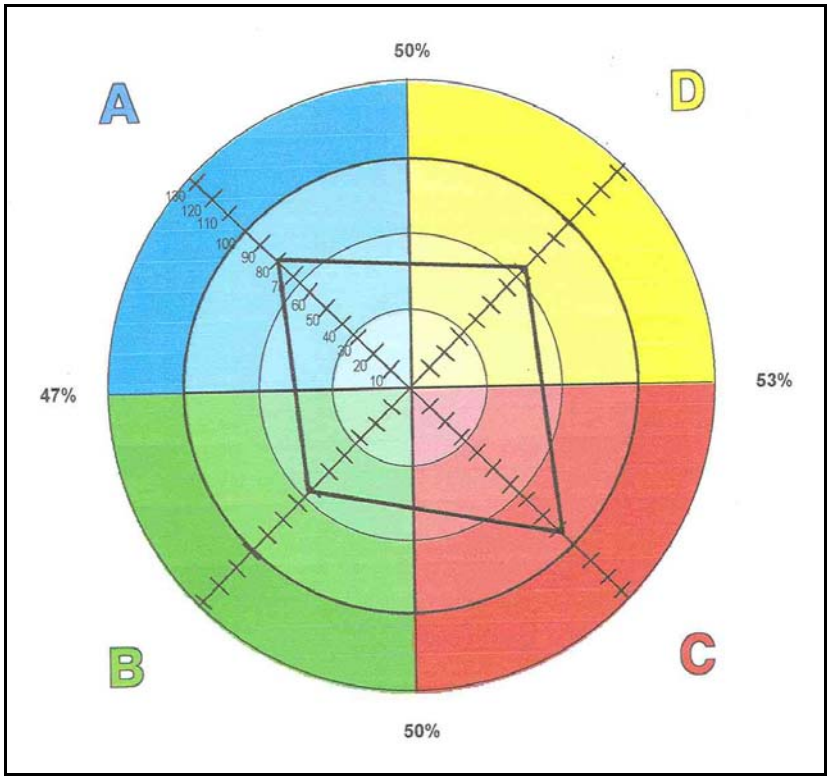
10.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.94	0.89
RR standard deviation (s)	0.03	0.03
Mean HR (1/min)	64.30	67.33
HR standard deviation (1/min)	3.37	2.22
Frequency domain results		
LF power (ms^2)	314.03	138.98
LF power n.u.	75.52	83.50
HF power (ms^2)	101.79	27.47
HF power n.u.	24.48	16.50
LF/HF ratio	3.09	5.06
Total power (ms^2)	469.37	262.93

10.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 80, **B** 63, **C** 92, **D** 72.
Adjective pairs: **A** 5, **B** 4, **C** 10, **D** 5.
Preference code: 1-2-1-1



10.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.61
Avoidance score: 1.34
Attachment class: Secure

Patient 11

11.1. Patient health questionnaire

11.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 12
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: Full

11.1.2. Anthropometrical data

Gender: Female
Mass: 68 kg
Body mass index: 24.38

Age: 33 yrs
Height: 1.67 m

11.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): arthritis (age 29), asthma (age 1, 29,30), mental illness (age 29).

Illnesses:	Age
Polio	1 yr
Stomach ulcer	30 yrs

Onset of FM: Gradually
Number of years suffering from FM: 4 yrs
FM progress: Improving
Description of pain: Flu-like pain
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Exercise Sleep	Stress Exercise Heat Cold

11.1.4. Treatment program

Exercise program
Pharmacological medication

Name of medication	Dose	Frequency
Trepiline	10 mg	1 per day
Arthrotec	-	1 per day
Cipramil	-	1 per day
Lanzor	30 mg	1 per day
Stillnox	-	when needed

11.2. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	4.44	Fatigue:	9.00
Days not feeling good:	7.15	Not rested:	9.00
Work missed:	0.00	Stiffness:	6.00
Inability to perform job tasks:	7.00	Anxiety:	6.00
Pain:	8.00	Depression:	4.00
Total FIQ score:	60.59		

11.3. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Thyroid:**	
fatigue	3	phlegm/mucus/		ache/pain	3	**Neuropsychiatric:**	
weight change	2	bronchitis	1	stiff	2	headache (severe)	3
fever/chills/sweats	3	other chest pain or		swelling	2	depression/apathy	2
appetite change	2	distress	2			anxiety/irritable	2
difficulty sleeping	3			**Muscles:**		numbness, tingling	2
light-headed	3	calf pain on		tight/stiff	3		
		exercise	2	ache-sore-pain		**Gastrointestinal:**	
Skin:		sore tender legs	3	- neck	3	heartburn or	
flushing	2			- shoulder	3	stomach pain	2
acne	2	**Mouth:**		- upper back	3	cramps or aches	1
nail/hair problem	2	sores/fissures	1	- low back	3		
		herpes or frequent		weakness	3	**Ears:**	
Eyes:						itching	3
vision	2	**Nose/Throat:**		**Lymph nodes:**		dizziness/vertigo	2
		postnasal drip	2	swollen	2		

11.4. ELISA

Cortisol level: 9.0 ng/ml

11.5. R-R interval recordings

11.5.1. Heart rate variability data: physical stressor

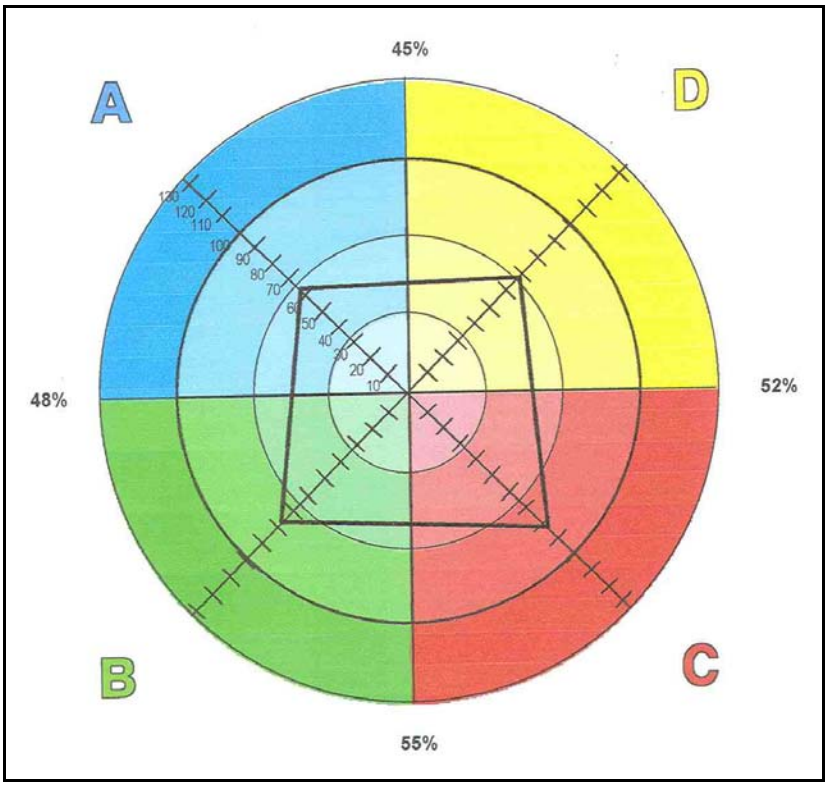
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.67	0.65	0.67
RR standard deviation (s)	0.01	0.03	0.01
Mean HR (1/min)	89.29	92.88	89.31
HR standard deviation (1/min)	2.42	3.50	2.42
Frequency domain results			
LF power (ms^2)	29.98	80.42	30.48
LF power n.u.	59.17	68.38	59.56
HF power (ms^2)	20.68	37.18	20.69
HF power n.u.	40.83	31.62	40.44
LF/HF ratio	1.45	2.16	1.47
Total power (ms^2)	69.18	137.44	70.05

11.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.69	0.67
RR standard deviation (s)	0.02	0.01
Mean HR (1/min)	87.30	89.04
HR standard deviation (1/min)	2.42	2.43
pNN50 (%)	0.00	0.00
Frequency domain results		
Total power (ms²)	138.38	85.11
LF power (ms²)	40.72	39.48
LF power n.u.	32.30	53.07
HF power (ms²)	85.35	34.92
HF power n.u.	67.70	46.93
LF/HF ratio	0.48	1.13

11.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 63, **B** 77, **C** 83, **D** 68.
Adjective pairs: **A** 7, **B** 5, **C** 9, **D** 3.
Preference code: 2-1-1-1

11.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.56
Avoidance score: 4.72
Attachment class: Dismissing

Patient 12

12.1. Patient health questionnaire

12.1.1. Personal information

Marital status: Separated
Highest academic qualification: Honours degree
Work status: Employed
Lifestyle: Occasionally uses alcohol
Lives alone
Disability compensation: None

12.1.2. Anthropometrical data

Gender: Female
Age: 41 yrs
Mass: 59 kg
Height: 1.67 m
Body mass index: 21.16

12.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): Neck injury
Ongoing illnesses from the past (age at which illness started in brackets): endometriosis (age 33), vaginitis (yeast) (constantly).

Illnesses:	Age	Traumatic psychological events:	Age
Glandular fever Seizer/ convulsion Hepatitis	26 yrs 26 yrs 27 yrs	Unhappy marriage	21-41

Onset of FM: Following an operation
Number of years suffering from FM: 15 yrs
FM progress: No change
Description of pain: Pain caused by muscle spasms
Fulfillment of Fukuda CFS diagnostic criteria: No

Factors relieving symptoms:	Factors increasing symptoms:
Sleep	Stress Exercise Caffeine Cold Heat

12.1.4. Treatment program

Exercise program
Physiotherapy
Pharmacological medication

Name of medication	Dose	Frequency
Nuzak	20 mg	1 per day

12.2. Review of current symptoms – questionnaire
(1 – mild, 2 – moderate, 3 – severe)

Constitutional:	
fatigue	2
weight change	2
fever/chills/sweats	1
appetite change	3
abnormal thirst	3
difficulty sleeping	3
light-headed	3

Skin:	
itching	1
flushing	1
rashes	1
hives	1
dry/rough skin	1
acne	1
nail/hair problem	1

Eyes:	
vision	3
tearing	3
itching	2
feels heavy	2
allergic shiners	2

Ears:	
itching	3
hearing problem	2
blocked ears	2
ringing in ears	3
sensitive to sounds	3
dizziness/vertigo	3

Lymph nodes:	
swollen	3
sensitive	3

Breast:	
lumps	1
cystic breasts	1
discharge	1
swollen	1

Lungs:	
cough	1
wheezes	1
shortness of breath	
- at rest	1
- on exertion	1
can't get full breath	1
hyperventilation	1
phlegm/mucus/ bronchitis	2
chest pain on exertion	1
other chest pain or distress	3
palpitations/rapid, slow or irregular heart rate/rhythm	1
ankle swelling	1
calf pain on Exercise	3
sore tender legs	3
high blood pressure	1

Mouth:	
sores/fissures	1
herpes or frequent cold sores	1
gum/tooth problems	1
tongue problem	1

Joints:	
ache/pain	1
stiff	1
swelling	1

G.U. and Hormonal: **(Female)**	
severe menstrual cramps	1
severe premenstrual cramps	1
menstrual irregularity	1
frequent vaginal discharge	3
yeast or candida infection	3
painful or difficult urination	3
pressure/urgency/ itching	2
vaginal rash	1

Muscles:	
tight/stiff	3
ache-sore-pain	
- neck	3
- shoulder	3
- upper back	3
- low back	2
weakness	3

Nose/Throat:	
stuffed/runny nose	1
postnasal drip	1
sore throat	1
tight/swollen throat	1
hoarse voice	3
trouble swallowing	3

Thyroid:	
mass or lump in neck	1
cold or heat tolerance	1
history of x-ray to neck	3

Neuropsychiatric:	
headache (mild/ moderate)	3
headache (severe)	3
depression/apathy	3
anxiety/irritable	2
hyperactive	2
learning disability	1
"brain fog"/difficulty concentrating	2
mood swings	3
suicidal	1
homicidal	1
numbness, tingling	2

Gastrointestinal:	
nausea	1
blenching, bloating, or passing gas	3
heartburn or stomach pain	1
diarrhea	3
constipation	3
cramps or aches	3
rectal pain or itching	1
blood or black stools	1
worms or parasites	1

12.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	7.00
Days not feeling good:	8.58	Not rested:	7.00
Work missed:	0.00	Stiffness:	8.00
Inability to perform job tasks:	3.00	Anxiety:	10.00
Pain:	8.00	Depression:	7.00
Total FIQ score:	58.58		

12.4. ELISA

Cortisol level: 8.0 ng/ml

12.5. R-R interval recordings

12.5.1. Heart rate variability data: physical stressor

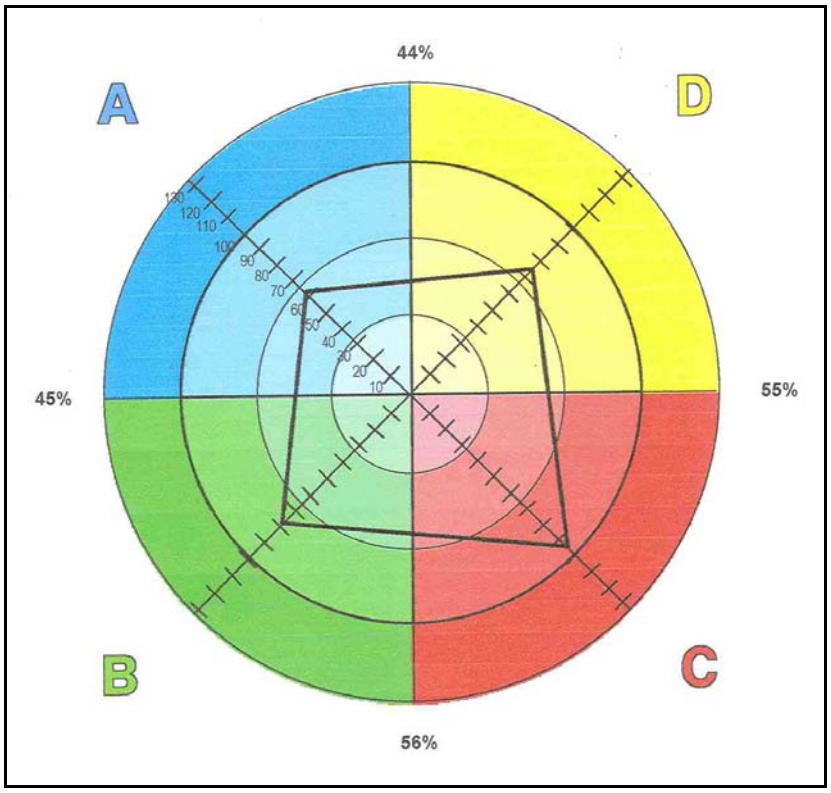
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.88	0.86	0.84
RR standard deviation (s)	0.02	0.03	0.03
Mean HR (1/min)	68.60	70.38	71.63
HR standard deviation (1/min)	2.04	2.80	3.14
Frequency domain results			
LF power (ms^2)	77.90	113.62	137.47
LF power n.u.	63.64	61.86	65.20
HF power (ms^2)	44.51	70.06	73.36
HF power n.u.	36.36	38.14	34.80
LF/HF ratio	1.75	1.62	1.87
Total power (ms^2)	134.62	193.57	258.79

12.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.82	0.78
RR standard deviation (s)	0.02	0.03
Mean HR (1/min)	73.26	77.09
HR standard deviation (1/min)	2.09	4.12
Frequency domain results		
LF power (ms^2)	132.14	324.23
LF power n.u.	58.12	86.20
HF power (ms^2)	95.20	51.91
HF power n.u.	41.88	13.80
LF/HF ratio	1.39	6.25
Total power (ms^2)	238.97	428.79

12.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 62, **B** 78, **C** 95, **D** 75.
Adjective pairs: **A** 6, **B** 7, **C** 8, **D** 3.
Preference code: 2-1-1-1

12.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 5.78
Avoidance score: 6.94
Attachment class: Fearful-avoidant

Patient 13

13.1. Patient health questionnaire

13.1.1. Personal information

Marital status: Single
Highest academic qualification: Postgraduate diploma
Work status: Employed (half day)

Lifestyle: Uses alcohol daily
Live alone
Disability compensation: None

13.1.2. Anthropometrical data

Gender: Female
Age: 46 yrs
Mass: 55 kg
Height: 1.71 m
Body mass index: 18.8

13.1.3 Medical background

Allergies: None
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): anemia (age unknown), hypertension (age 37), high cholesterol (age 40).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Appendicectomy Accident	18 yrs -	Stressful childhood, often unhappy	child

Onset of FM: Following a accident
Number of years suffering from FM: 10 yrs
FM progress: No changes
Description of pain: Continuous pain at tender points.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors increasing symptoms:
Sleep Stress Barometric pressure Time of day: early morning

13.1.4. Treatment program

Exercise program
Physiotherapy
Pharmacological medication

Name of medication	Dose	Frequency
Trepiline	25 mg	1 per day
Anafranil	10 mg	1 per day
Co-diovan	-	1 per day

13.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Ears:**	
fatigue	3	can't get full breath	1	stiff	1	sensitive to sounds	3
abnormal thirst	2	palpitations/rapid,					
difficulty sleeping	3	heart rate/rhythm	1	**G.U. and Hormonal:**		**Muscles:**	
light-headed	1	high blood pressure	2	**(Female)**		tight/stiff	3
				severe menstrual		ache-sore-pain	
Neuropsychiatric:		**Mouth:**		cramps	2	- neck	2
anxiety/irritable	2	gum/tooth problems	1	severe premenstrual		- shoulder	2
mood swings	1			cramps	1	- upper back	2
		Nose/Throat:		menstrual irregularity	1	- low back	3
		sore throat	1				

13.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.61	Fatigue:	8.00
Days not feeling good:	5.72	Not rested:	8.00
Work missed:	0.00	Stiffness:	7.00
Inability to perform job tasks:	7.00	Anxiety:	7.00
Pain:	7.00	Depression:	3.00
Total FIQ score:	53.33		

13.4. ELISA

Cortisol level: 10.0 ng/ml

13.5. R-R interval recordings

13.5.1. Heart rate variability data: physical stressor

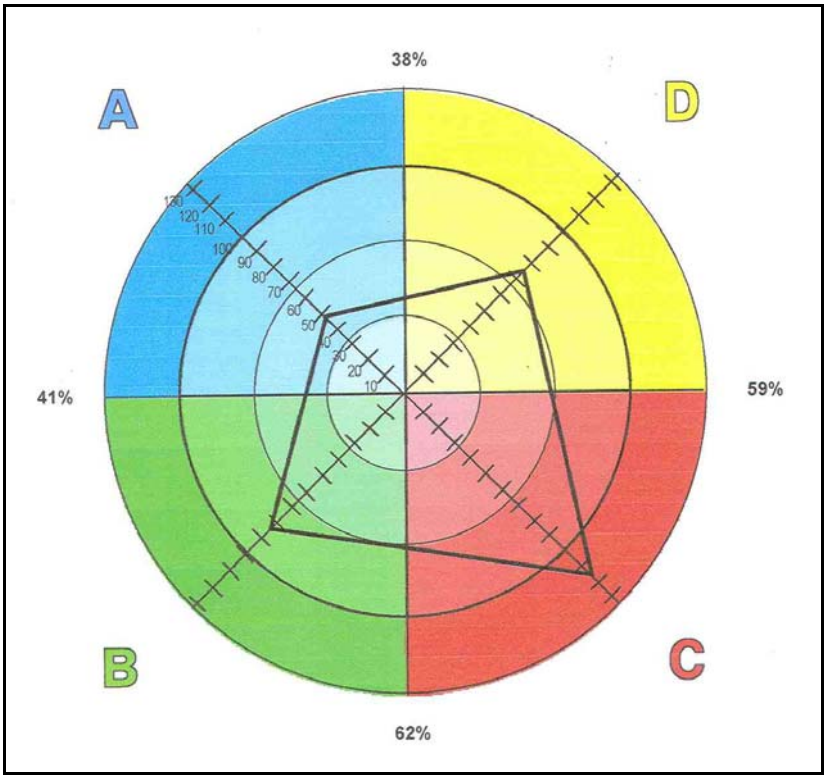
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.81	0.76	0.76
RR standard deviation (s)	0.02	0.02	0.02
Mean HR (1/min)	74.32	78.76	79.23
HR standard deviation (1/min)	2.55	2.40	2.44
Frequency domain results			
LF power (ms^2)	112.35	175.34	149.48
LF power n.u.	65.64	88.73	82.38
HF power (ms^2)	58.80	22.26	31.97
HF power n.u.	34.36	11.27	17.62
LF/HF ratio	1.91	7.88	4.68
Total power (ms^2)	194.52	218.88	187.04

13.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.76	0.70
RR standard deviation (s)	0.02	0.02
Mean HR (1/min)	79.19	85.81
HR standard deviation (1/min)	2.47	3.49
Frequency domain results		
LF power (ms²)	144.56	246.49
LF power n.u.	81.88	91.57
HF power (ms²)	31.99	22.68
HF power n.u.	18.12	8.43
LF/HF ratio	4.52	10.87
Total power (ms²)	181.37	283.62

13.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 47, **B** 84, **C** 116, **D** 75.
Adjective pairs: **A** 3, **B** 7, **C** 10, **D** 4.
Preference code: 2-1-1-1

13.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 4.50
Avoidance score: 5.06
Attachment class: Fearful-avoidant

Patient 14

14.1. Patient health questionnaire

14.1.1. Personal information

Marital status: Married
Highest academic qualification: Degree
Work status: Employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: None

14.1.2. Anthropometrical data

Gender: Female
Age: 38 yrs
Mass: 57 kg
Height: 1.59 m
Body mass index: 22.55

14.1.3 Medical background

Allergies: Flagyl
Current illnesses (apart from FM): None
Ongoing illnesses from the past (age at which illness started in brackets): heart murmur (age 14).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Heart catarisation	14 yrs	1st year on university experienced as traumatic	18 yrs
Illnesses:		Miscarriage	29 yrs
Hepatitis	8 yrs	Difficult pregnancy	32 yrs
Viral infections (Coxsackie, Ebstein Barr, Sito Eliza)	24 yrs	Marital problems and separation	35 yrs
Tumor	32 yrs		
Pneumonia	34 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 4 yrs
FM progress: No change
Description of pain: Continuous sharp, burning pain.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Moderate exercise Sunlight Sleep Season: spring	Stress Caffeine Season: winter Heat Cold Food: sugar, red meat Time of day: early in morning, late at night

14.1.4. Treatment program

Exercise program
Pharmacological medication

Name of medication	Dose	Frequency
Trepiline	5 mg	1 day
Cipramil	10 mg	1 day
Tramahexal	50 mg	2 when needed
Slow-Mag	535 mg	2 per day

14.2. Review of current symptoms – questionnaire
(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Thyroid:**	
fatigue	2	shortness of breath		ache/pain	2	cold or heat	
weight change	2	- on exertion	2	stiff	2	tolerance	1
fever/chills/sweats	1	can't get full breath	1				
appetite change	1	phlegm/mucus/		**G.U. and Hormonal:**		**Neuropsychiatric:**	
light-headed	2	bronchitis	1	**(Female)**		headache (severe)	3
		chest pain on		frequent vaginal		anxiety/irritable	1
Skin:		exertion	2	discharge	1	"brain fog"/difficulty	
dry/rough skin	1	other chest pain or		yeast or candida		concentrating	1
nail/hair problem	1	distress	2	sexual problem	1	numbness, tingling	1
		calf pain on				faints/blackouts	1
Eyes:		exercise	2	**Muscles:**			
itching	1	sore tender legs	2	tight/stiff	3	**Gastrointestinal:**	
feels heavy	2			ache-sore-pain		blenching, bloating,	
		Mouth:		- neck	3	or passing gas	2
Ears:		gum/tooth problems	1	- shoulder	3	constipation	3
hearing problem	1			- upper back	3	cramps or aches	2
ringing in ears	1	**Nose/Throat:**		- low back	3		
sensitive to sounds	2	stuffed/runny nose	1	weakness	1	**Lymph nodes:**	
dizziness/vertigo	1	sore throat	1			sensitive	1

14.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	1.67	Fatigue:	8.00
Days not feeling good:	8.58	Not rested:	8.00
Work missed:	0.00	Stiffness:	4.00
Inability to perform job tasks:	3.00	Anxiety:	2.00
Pain:	4.00	Depression:	1.00
Total FIQ score:	40.25		

14.4. ELISA

Cortisol level: 12.0 ng/ml

14.5. R-R interval recordings

14.5.1. Heart rate variability data: physical stressor

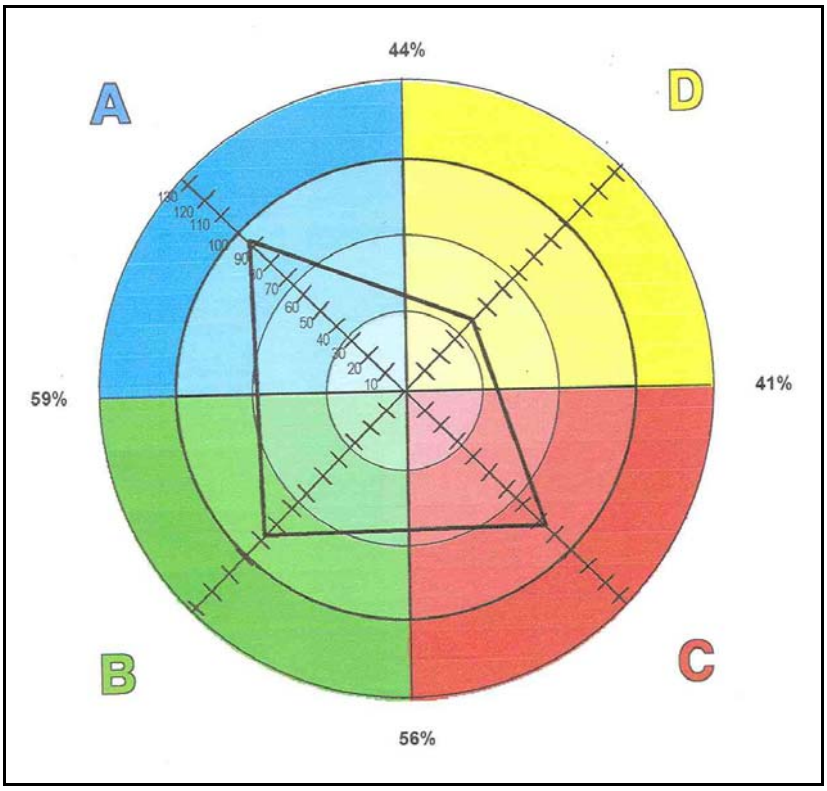
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.79	0.78	0.78
RR standard deviation (s)	0.02	0.03	0.03
Mean HR (1/min)	75.97	77.14	76.75
HR standard deviation (1/min)	2.25	3.28	3.30
Frequency domain results			
LF power (ms^2)	62.65	177.66	118.11
LF power n.u.	28.33	51.43	35.45
HF power (ms^2)	158.47	167.77	215.08
HF power n.u.	71.67	48.57	64.55
LF/HF ratio	0.40	1.06	0.55
Total power (ms^2)	231.81	357.86	365.30

14.5.2 Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.79	0.78
RR standard deviation (s)	0.03	0.03
Mean HR (1/min)	76.33	77.47
HR standard deviation (1/min)	2.89	3.26
Frequency domain results		
LF power (ms^2)	112.22	150.89
LF power n.u.	29.93	35.99
HF power (ms^2)	262.78	268.39
HF power n.u.	70.07	64.01
LF/HF ratio	0.43	0.56
Total power (ms^2)	379.45	422.81

14.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*



Profile score: **A** 93, **B** 87, **C** 84, **D** 41.
Adjective pairs: **A** 6, **B** 9, **C** 7, **D** 2.
Preference code: 1-1-1-2

14.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.89
Avoidance score: 2.67
Attachment class: Secure

Patient 15

15.1. Patient health questionnaire

15.1.1. Personal information

Marital status: Married
Highest academic qualification: Degree
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: Full

15.1.2. Anthropometrical data

Gender: Female
Age: 53 yrs
Mass: 80 kg
Height: 1.55 m
Body mass index: 33.30

15.1.3 Medical background

Allergies: Eczema
Current illnesses (apart from FM): macular degeneration, restless legs.
Ongoing illnesses from the past (age at which illness started in brackets): allergies (age 9), heart murmur (age 9), hypertension (age 49), migraine headaches (age 19), thyroid problem (age 39).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Neck problems 2 neck operations Hysterectomy	48 yrs 48 yrs 29 yrs	Father died (chronic colds and flues started)	30 yrs
Illnesses:			
Diagnosed with MS Macular degeneration	49 yrs 51 yrs		

Onset of FM: Gradually
Number of years suffering from FM: 20 yrs
FM progress: Improving
Description of pain: Continuous pain spread over whole body. Cannot sleep because of pain.
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors relieving symptoms:	Factors increasing symptoms:
Moderate exercise Heat	Stress Humidity Sleep Cold

15.1.4. Treatment program

Name of medication	Dose	Frequency
Estrofem	-	1 per day
Eltroxin	0.1 mg	1 per day
Detrusitol	1 mg	1 per day
Celebrex	200 mg	1 per day
Robaxin	500 mg	2-3 per day
TyLenol ExRl	-	2-3 per day
Calcimight	-	1 per day
Sinemet CR	50/200 mg	1-2 per day

Exercise program
Non-allopathic treatment
Pharmacological medication

15.2. Review of current symptoms – questionnaire
(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Breast:**		**Joints:**		**Thyroid:**	
fatigue	1	lumps	1	ache/pain	3	history of x-ray to	
appetite change	1			stiff	1	neck	3
difficulty sleeping	3	**Lungs:**		swelling	1		
light-headed	1	shortness of breath				**Neuropsychiatric:**	
		- on exertion	1	**Muscles:**		headache (mild/	
Skin:		ankle swelling	2	tight/stiff	3	moderate)	3
itching	1	calf pain on		ache-sore-pain		depression/apathy	1
rashes	1	sore tender legs	1	- neck	3	anxiety/irritable	1
dry/rough skin	3	high blood pressure	2	- shoulder	3	"brain fog"/difficulty	
nail/hair problem	2			- upper back	2	concentrating	1
		Mouth:		- low back	2		
Eyes:		sores/fissures	2	weakness	1	**Gastrointestinal:**	
vision	3	tongue problem	1			nausea	1
				Lymph nodes:		heartburn or	
Ears:		**Nose/Throat:**		swollen	1	stomach pain	1
itching	1	stuffed/runny nose	1	sensitive	1	cramps or aches	1
sensitive to sounds	1	postnasal drip	1				
		sore throat	1				

15.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	1.90	Fatigue:	5.00
Days not feeling good:	2.86	Not rested:	9.00
Work missed:	0.00	Stiffness:	6.00
Inability to perform job tasks:	4.00	Anxiety:	3.00
Pain:	8.00	Depression:	1.00
Total FIQ score:	40.76		

15.4. ELISA
Cortisol level: 10.0 ng/ml

15.5. R-R interval recordings

15.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.75	0.78	0.76
RR standard deviation (s)	0.01	0.02	0.01
Mean HR (1/min)	79.82	76.87	78.85
HR standard deviation (1/min)	0.92	2.08	1.65
Frequency domain results			
LF power (ms^2)	9.96	160.16	22.52
LF power n.u.	50.62	86.67	60.98
HF power (ms^2)	9.72	24.63	14.41
HF power n.u.	49.38	13.33	39.02
LF/HF ratio	1.03	6.50	1.56
Total power (ms^2)	22.42	208.38	47.44

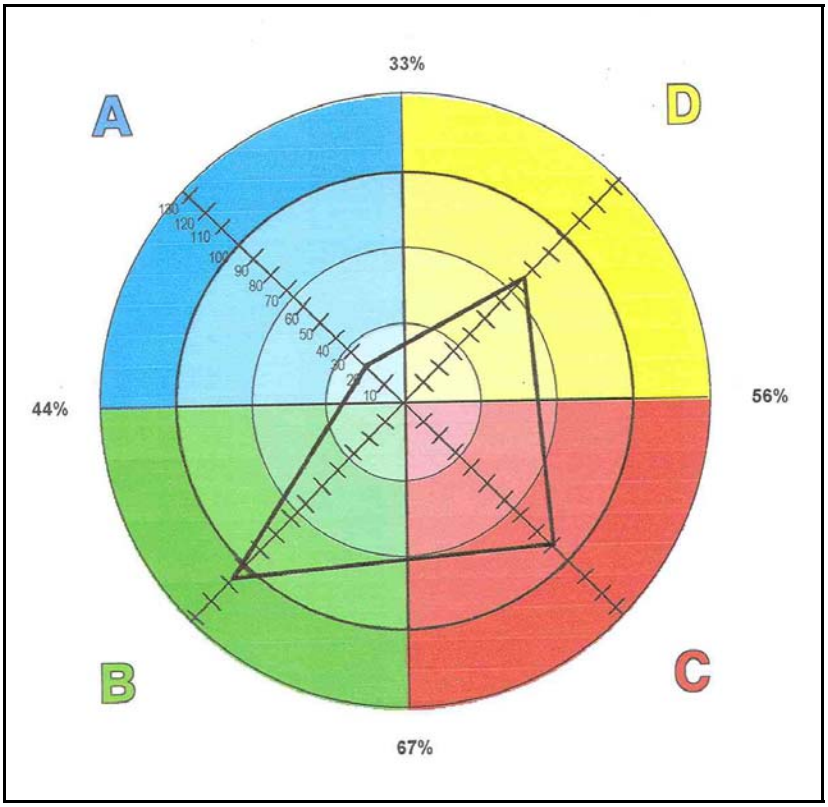
15.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.81	0.79
RR standard deviation (s)	0.01	0.01
Mean HR (1/min)	73.94	76.25
HR standard deviation (1/min)	1.53	1.66
Frequency domain results		
LF power (ms^2)	41.13	26.95
LF power n.u.	73.32	74.29
HF power (ms^2)	14.97	9.33
HF power n.u.	26.68	25.71
LF/HF ratio	2.75	2.89
Total power (ms^2)	64.76	41.37

15.6. Herrmann Brain Dominance Instrument

*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 21, **B** 107, **C** 90, **D** 75.
Adjective pairs: **A** 0, **B** 8, **C** 9, **D** 7.
Preference code: 3-1-1-1



15.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.83
Avoidance score: 1.72
Attachment class: Secure

Patient 16

16.1. Patient health questionnaire

16.1.1. Personal information

Marital status: Married
Highest academic qualification: Degree
Work status: Not employed
Lifestyle: Occasionally uses alcohol
Live with someone who can take care
Disability compensation: Partial

16.1.2. Anthropometrical data

Gender: Female
Mass: 80 kg
Body mass index: 32.87
Age: 52 yrs
Height: 1.56 m

16.1.3 Medical background

Allergies: voltaren
Current illnesses (apart from FM): problems after back operation
Illnesses of the past: allergies (age 23), anemia (age 26), thyroid problem (age 44), bleeding disorder (age 28), high cholesterol (age 49), migraine headaches (age 7), vaginitis (yeast)(age 21).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age (yrs)
Hysterectomy	37 yrs	Parents divorce – grandparents brought her up	2 yrs
Intestine obstruction operation	40 yrs	Molestation by grandfather	4 yrs
Hospitalised with severe pneumonia	40 yrs	Because of accusations against grandfather, parents rejected her	whole life
Removal of gall bladder	42 yrs	Meets biological father, very traumatic. Relationship with him	
Kidney lithnic	46 yrs	stressful	44 yrs
Removal of ovaries	46 yrs	Death of eldest	42 yrs
Back operation	51 yrs		
Illnesses:			
Hepatitis	7 yrs		
Kidney/ bladder disease	46,47		
Pneumonia	42 yrs		
Stomach ulcer	28 yrs		
Endometriosis	26 yrs		
Cyst of ovaries	46 yrs		
Tumor	47 yrs		

Onset of FM: After an operation and a period of overexertion and major stress (burnout)
Number of years suffering from FM: 18 yrs
FM progress: Improving
Description of pain: Continuous burning pain. Feels as if whole body is bruised
Fulfillment of Fukuda CFS diagnostic criteria: Yes

Factors increasing symptoms:
Stress
Exercise
Alcohol
Humidity
Season: change between seasons
Cold
Food: sugar
Sleep

16.1.4. Treatment program

Exercise program
Physiotherapy
Non-allopathic treatment
Pharmacological medication

Name of medication	Dose	Frequency
Lorrien	10 mg	1 per day
Demetrin	10 mg	2 per day
Trepilene	25 mg	3 per day
Eltroxin	10 mg	1 per day
Celebrex	20 mg	1 per day

16.2. Review of current symptoms – questionnaire

(1 – mild, 2 – moderate, 3 – severe)

Constitutional:		**Lungs:**		**Joints:**		**Ears:**	
fatigue	2	shortness of breath		ache/pain	2	ringing in ears	2
weight change	1	- at rest	2	stiff	3	sensitive to sounds	3
fever/chills/sweats	2	- on exertion	3	swelling	1	dizziness/vertigo	2
appetite change	2	can't get full breath	3				
abnormal thirst	3	hyperventilation	3	**Muscles:**		**Neuropsychiatric:**	
difficulty sleeping	1	phlegm/mucus/		tight/stiff	3	headache (mild/	
light-headed	2	bronchitis	1	ache-sore-pain		moderate)	3
		chest pain on		- neck	2	headache (severe)	2
Gastrointestinal:		exertion	2	- shoulder	3	depression/apathy	1
nausea	1	other chest pain or		- upper back	3	anxiety/irritable	2
blenching, bloating,		distress	1	- low back	3	hyperactive	1
or passing gas	2	palpitations/rapid,		weakness	2	learning disability	2
heartburn or		slow or irregular				"brain fog"/difficulty	
stomach pain	3	heart rate/rhythm	3	**Lymph nodes:**		concentrating	2
constipation	1	ankle swelling	1	sensitive	1	mood swings	1
cramps or aches	1	calf pain on				numbness, tingling	2
		exercise	2	**Nose/Throat:**			
Skin:		sore tender legs	3	postnasal drip	1	**Eyes:**	
itching	1			sore throat	1	vision	2
flushing	2	**Thyroid:**		trouble swallowing	1	tearing	1
dry/rough skin	2	cold or heat				itching	1
		tolerance	2			feels heavy	3
		history of x-ray to				allergic shiners	1
		neck	2				

16.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	6.66	Fatigue:	3.00
Days not feeling good:	5.72	Not rested:	3.00
Work missed:	4.29	Stiffness:	8.00
Inability to perform job tasks:	8.00	Anxiety:	4.00
Pain:	6.00	Depression:	1.00
Total FIQ score:	49.67		

16.4. ELISA
Cortisol level: 12.0 ng/ml

16.5. R-R interval recordings

16.5.1. Heart rate variability data: physical stressor

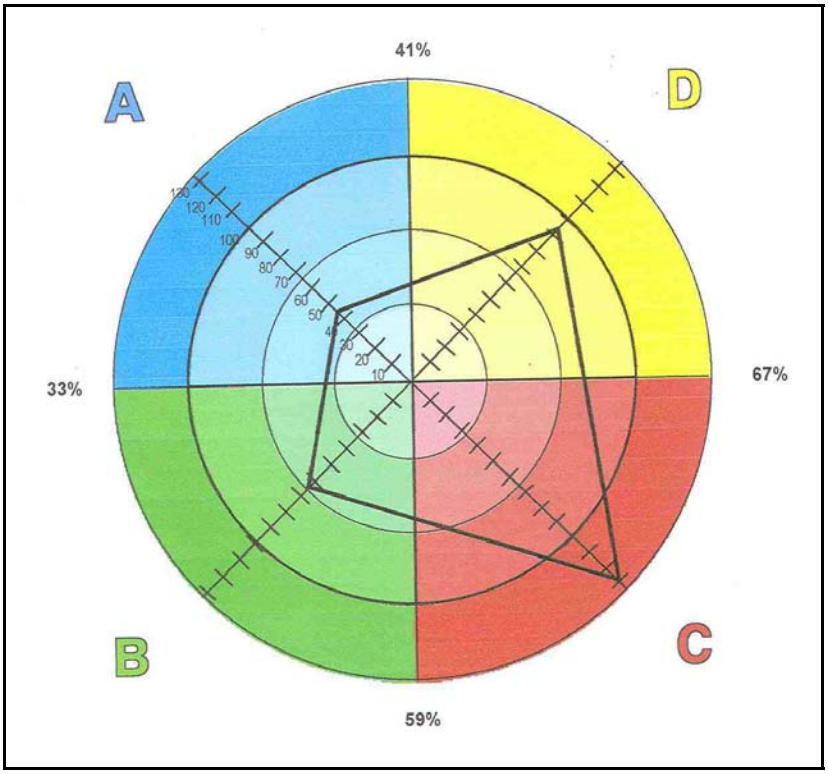
Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.70	0.67	0.67
RR standard deviation (s)	0.01	0.01	0.01
Mean HR (1/min)	85.65	89.87	90.19
HR standard deviation (1/min)	1.90	1.91	1.73
Frequency domain results			
LF power (ms^2)	37.72	38.48	8.32
LF power n.u.	61.42	70.20	28.29
HF power (ms^2)	23.70	16.34	21.10
HF power n.u.	38.58	29.80	71.71
LF/HF ratio	1.59	2.36	0.39
Total power (ms^2)	64.70	58.24	30.35

16.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.59	0.59
RR standard deviation (s)	0.01	0.01
Mean HR (1/min)	102.07	102.48
HR standard deviation (1/min)	2.33	1.80
Frequency domain results		
LF power (ms^2)	14.73	20.86
LF power n.u.	70.57	77.64
HF power (ms^2)	6.14	6.01
HF power n.u.	29.43	22.36
LF/HF ratio	2.40	3.47
Total power (ms^2)	35.50	29.57

16.6. Herrmann Brain Dominance Instrument
*(**A** cerebral left quadrant; **B** limbic left quadrant; **C** limbic right quadrant; **D** cerebral left quadrant)*

Profile score: **A** 44, **B** 65, **C** 129, **D** 93.
Adjective pairs: **A** 5, **B** 3, **C** 12, **D** 4.
Preference code: 2-2-1-1



16.7. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 2.50
Avoidance score: 1.67
Attachment class: Secure

II. Control group

Control 1

1.1. Control health questionnaire

1.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 12
Work status: Employed (half day)
Lifestyle: Exercise 45 minutes, 5 times a week

1.1.2. Anthropometrical data

Gender: Female
Mass: 79 kg
Body mass index: 27.34

Age: 51 yrs
Height: 1.7 m

1.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Ankle operation	16		

1.1.4. Medication

Name of medication	Dose	Frequency
Activelle	1 mg	1 per day

1.2. Review of current symptoms – questionnaire

No symptoms

1.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	0.00		

1.4. ELISA

Cortisol level: 6 ng/ml

1.5. R-R interval recordings

1.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.91	0.81	0.83
RR standard deviation (s)	0.03	0.04	0.02
Mean HR (1/min)	66.30	74.19	72.60
HR standard deviation (1/min)	3.04	4.74	2.44
Frequency domain results			
LF power (ms^2)	279.14	394.29	126.09
LF power n.u.	68.20	83.79	61.28
HF power (ms^2)	130.14	76.28	79.67
HF power n.u.	31.80	16.21	38.72
LF/HF ratio	2.14	5.17	1.58
Total power (ms^2)	500.97	542.96	222.64

1.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.81	0.82
RR standard deviation (s)	0.02	0.02
Mean HR (1/min)	73.83	73.45
HR standard deviation (1/min)	2.86	2.34
Frequency domain results		
LF power (ms^2)	113.41	110.30
LF power n.u.	71.73	63.24
HF power (ms^2)	44.69	64.12
HF power n.u.	28.27	36.76
LF/HF ratio	2.54	1.72
Total power (ms^2)	193.50	200.27

1.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.50
Avoidance score: 2.28
Attachment class: Secure

Control 2

2.1. Control health questionnaire

2.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Employed
Lifestyle: Occasionally uses alcohol

2.1.2. Anthropometrical data

Gender: Female
Age: 44 yrs
Mass: 56 kg
Height: 1.68 m
Body mass index: 19.84

2.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Tonsillectomy	4 yrs
Illnesses:	
Anemia	40 yrs

2.1.4. Medication
None

2.2. Review of current symptoms – questionnaire
No symptoms

2.3. Fibromyalgia Impact Questionnaire
Total FIQ score: 0.00

2.4. ELISA
Cortisol level: 2.5 ng/ml

2.5. R-R interval recordings

2.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.77	1.00	0.76
RR standard deviation (s)	0.02	0.03	0.03
Mean HR (1/min)	78.35	60.39	78.75
HR standard deviation (1/min)	1.93	2.93	3.68
Frequency domain results			
LF power (ms^2)	56.22	187.44	336.04
LF power n.u.	48.44	53.77	55.13
HF power (ms^2)	59.84	161.13	273.56
HF power n.u.	51.56	46.23	44.87
LF/HF ratio	0.94	1.16	1.23
Total power (ms^2)	123.43	376.73	651.22

2.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.81	0.83
RR standard deviation (s)	0.06	0.03
Mean HR (1/min)	74.83	72.33
HR standard deviation (1/min)	6.57	2.88
Frequency domain results		
LF power (ms^2)	973.37	173.94
LF power n.u.	89.53	56.03
HF power (ms^2)	113.78	136.52
HF power n.u.	10.47	43.97
LF/HF ratio	8.56	1.27
Total power (ms^2)	1404.17	316.90

2.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.89
Avoidance score: 3.78
Attachment class: Secure

Control 3

3.1. Control health questionnaire

3.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Employed
Lifestyle: Exercise 30 minutes, 3 times a week

3.1.2. Anthropometrical data

Gender: Female
Age: 55 yrs
Mass: 65 kg
Height: 1.57 m
Body mass index: 26.37

3.1.3 Medical background

Allergies: None
Current illnesses: Epilepsy
Ongoing illnesses from the past: arthritis

Operations and hospitalisations:	Age	Illnesses:	Age
Hysterectomy	43 yrs	Tonsillitis	10 yrs

3.1.4. Medication

Name of medication	Dose	Frequency
Estraderm TTS	50 mg	2 times a week
Lamictin	-	1 per day

3.2. Review of current symptoms – questionnaire
Calf pain on exercise
Mild headaches

3.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	6.05	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	6.05		

3.4. ELISA
Cortisol level: 4 ng/ml

3.5. R-R interval recordings
(recording discarded because ectopic beats exceeds 20% limitation)

3.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.00
Avoidance score: 1.33
Attachment class: Secure

Control 4

4.1. Control health questionnaire

4.1.1. Personal information

Marital status: Single
Highest academic qualification: Honours degree
Work status: Employed
Lifestyle: Occasionally uses alcohol
Exercise 30 minutes, 2 times a week

4.1.2. Anthropometrical data

Gender: Female
Age: 21 yrs
Mass: 62 kg
Height: 1.59 m
Body mass index: 24.52

4.1.3 Medical background

Allergies: Hayfever
Current illnesses: None
Ongoing illnesses from the past: Allergies

Operations and hospitalisations:	Age
Tonsillectomy	7 yrs
Operation on foot	14 yrs

4.1.4. Medication
None

4.2. Review of current symptoms – questionnaire

Fatigue	Weight change
Acne	Postnasal drip
Sore neck and low back muscles	Cough
Menstrual cramps	

4.3. Fibromyalgia Impact Questionnaire
FIQ total score

4.4. ELISA
Cortisol level: 7.0 ng/ml

4.5. R-R interval recordings

4.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.84	0.83	0.84
RR standard deviation (s)	0.06	0.05	0.04
Mean HR (1/min)	72.19	72.46	71.60
HR standard deviation (1/min)	4.81	5.45	4.05
Frequency domain results			
LF power (ms^2)	167.89	1384.39	442.72
LF power n.u.	27.79	77.06	48.43
HF power (ms^2)	436.24	412.07	471.46
HF power n.u.	72.21	22.94	51.57
LF/HF ratio	0.38	3.36	0.94
Total power (ms^2)	616.64	1875.16	947.63

4.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.92	0.91
RR standard deviation (s)	0.06	0.06
Mean HR (1/min)	66.27	66.23
HR standard deviation (1/min)	6.09	5.01
Frequency domain results		
LF power (ms^2)	1532.98	793.56
LF power n.u.	76.70	67.19
HF power (ms^2)	465.66	387.55
HF power n.u.	23.30	32.81
LF/HF ratio	3.29	2.05
Total power (ms^2)	2348.52	1325.11

4.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 2.61
Avoidance score: 3.33
Attachment class: Secure

Control 5

5.1. Control health questionnaire

5.1.1. Personal information

Marital status: Married
Highest academic qualification: Senior certificate
Work status: Employed
Lifestyle: Exercise 120 minutes, 1 time a week

5.1.2. Anthropometrical data

Gender: Male
Age: 27 yrs
Mass: 90 kg
Height: 1.79 m
Body mass index: 28.08

5.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None
Operations and hospitalisations: Appendicectomy at 25 yrs of age

5.1.4. Medication
None

5.2. Review of current symptoms – questionnaire
Hearing problem
Runny nose
Bloating, passing gas

5.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	2.00
Days not feeling good:	0.00	Not rested:	2.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	4.00		

5.4. ELISA

Cortisol level: 5.5 ng/ml

5.5. R-R interval recordings

5.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.09	0.94	0.93
RR standard deviation (s)	0.07	0.08	0.06
Mean HR (1/min)	55.72	64.75	65.16
HR standard deviation (1/min)	4.64	5.82	4.87
Frequency domain results			
LF power (ms^2)	1121.80	1222.43	759.53
LF power n.u.	48.45	52.72	53.85
HF power (ms^2)	1193.75	1096.39	650.82
HF power n.u.	51.55	47.28	46.15
LF/HF ratio	0.94	1.12	1.17
Total power (ms^2)	2466.57	2494.89	1483.73

5.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.88	0.83
RR standard deviation (s)	0.05	0.04
Mean HR (1/min)	68.33	72.49
HR standard deviation (1/min)	4.55	4.49
Frequency domain results		
LF power (ms^2)	363.05	397.17
LF power n.u.	57.82	52.26
HF power (ms^2)	264.82	362.81
HF power n.u.	42.18	47.74
LF/HF ratio	1.37	1.09
Total power (ms^2)	661.68	784.93

5.6. Experiences in Close Relationships questionnaire

Attachment results

Anxiety score: 1.83

Avoidance score: 1.17

Attachment class: Secure

Control 6

6.1. Control health questionnaire

6.1.1. Personal information

Marital status: Married

Highest academic qualification: Diploma

Work status: Employed

Lifestyle: Occasionally uses alcohol
Exercise 30 minutes, 6 times a week

6.1.2. Anthropometrical data

Gender: Female
Age: 55 yrs
Mass: 70 kg
Height: 1.63 m
Body mass index: 26.35

6.1.3 Medical background

Allergies: Sulpher
Ongoing illnesses from the past (age at which illness started in brackets): hypothyroidism (age 52).

Operations and hospitalisations:	Age	Traumatic psychological events:	Age
Caesarean section	29,31	Miscarriage	33 yrs
Hysterectomy	54 yrs		
Illnesses:			
Asthma	6 yrs		
Hepatitis	8 yrs		
Pneumonia	32 yrs		
Endometriosis	53,54		
Non-cancerous breast disease	53,55		

6.1.4. Medication

Name of medication	Dose	Frequency
Eltroxin	0.1 mg	1 per day
Estrofem	1 mg	1 per day

6.2. Review of current symptoms – questionnaire
Problems with vision
Sore neck, back and low back muscles
Mild headaches

6.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	0.00		

6.4. ELISA

Cortisol level: 3.0 ng/ml

6.5. R-R interval recordings

6.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.03	0.97	0.96
RR standard deviation (s)	0.04	0.04	0.03
Mean HR (1/min)	58.30	62.33	62.35
HR standard deviation (1/min)	2.71	3.99	2.43
Frequency domain results			
LF power (ms^2)	126.13	315.01	295.56
LF power n.u.	26.31	45.07	50.44
HF power (ms^2)	353.22	383.94	290.38
HF power n.u.	73.69	54.93	49.56
Total power (ms^2)	529.03	880.48	635.88

6.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.87	0.89
RR standard deviation (s)	0.04	0.04
Mean HR (1/min)	68.88	67.83
HR standard deviation (1/min)	3.95	3.65
Frequency domain results		
LF power (ms^2)	215.39	359.40
LF power n.u.	38.30	58.41
HF power (ms^2)	347.02	255.96
HF power n.u.	61.70	41.59
LF/HF ratio	0.62	1.40
Total power (ms^2)	619.96	720.23

6.6. Experiences in Close Relationships questionnaire

Attachment results

Anxiety score: 2.00

Avoidance score: 2.33

Attachment class: Secure

Control 7

7.1. Control health questionnaire

7.1.1. Personal information

Marital status: Married

Highest academic qualification: Grade 12

Work status: Employed

Lifestyle: Smoked 1 pack of cigarettes a day for past 25 yrs
Occasionally uses alcohol
Exercise 20 minutes, 2 times a week

7.1.2. Anthropometrical data

Gender: Female
Age: 55 yrs
Mass: 56 kg
Height: 1.56 m
Body mass index: 23.01

7.1.3 Medical background

Allergies: None
Current illnesses: Barlow's syndrome
Ongoing illnesses from the past (age at which illness started in brackets): migraine headaches (age 35)

Operations and hospitalisations:	Age
Hysterectomy Heamaroidectomy	47 yrs 53 yrs
Illnesses:	
Anemia	1 yr

7.1.4. Medication
None

7.2. Review of current symptoms – questionnaire
Light-headedness

7.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	3.03	Fatigue:	7.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	10.03		

7.4. ELISA
Cortisol level: 7.5 ng/ml

7.5. R-R interval recordings

HRV recordings were discarded because of extra systole (Barlow's syndrome)

7.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 2.00
Avoidance score: 1.89
Attachment class: Secure

Control 8

8.1. Control health questionnaire

8.1.1. Personal information

Marital status: Married
Highest academic qualification: Doctoral degree
Work status: Employed
Lifestyle: Occasionally uses alcohol

8.1.2. Anthropometrical data

Gender: Female
Age: 36 yrs
Mass: 56 kg
Height: 1.64 m
Body mass index: 20.82

8.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Tonsillectomy	27 yrs
Illnesses:	
Bronchitis	33 yrs

8.1.4. Medication
None

8.2. Review of current symptoms – questionnaire
No symptoms

8.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	3.63	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	3.63		

8.4. ELISA

Cortisol level: 7.5 ng/ml

8.5. R-R interval recordings

8.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.69	0.64	0.64
RR standard deviation (s)	0.01	0.01	0.01
Mean HR (1/min)	87.22	94.00	94.11
HR standard deviation (1/min)	1.62	2.53	2.21
Frequency domain results			
LF power (ms^2)	23.76	56.98	33.35
LF power n.u.	47.45	73.81	75.00
HF power (ms^2)	26.32	20.22	11.12
HF power n.u.	52.55	26.19	25.00
LF/HF ratio	0.90	2.82	3.00
Total power (ms^2)	52.51	88.85	47.32

8.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.58	0.60
RR standard deviation (s)	0.02	0.02
Mean HR (1/min)	104.10	100.72
HR standard deviation (1/min)	3.67	3.36
Frequency domain results		
LF power (ms^2)	97.67	53.82
LF power n.u.	80.25	77.84
HF power (ms^2)	24.04	15.32
HF power n.u.	19.75	22.16
LF/HF ratio	4.06	3.51
Total power (ms^2)	145.61	71.95

8.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.56
Avoidance score: 1.33
Attachment class: Secure

Control 9

9.1. Control health questionnaire

9.1.1. Personal information

Marital status: Married
Highest academic qualification: Degree
Work status: Employed
Lifestyle: Exercise 45 minutes, 5 times a week

9.1.2. Anthropometrical data

Gender: Male
Age: 31 yrs
Mass: 86 kg
Height: 1.72 m
Body mass index: 29.07

9.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None
Operations and hospitalisations: None

9.1.4 Medication
None

9.2. Review of current symptoms – questionnaire

Hearing problem
Tight muscles
Low back pain

9.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	0.00		

9.4. ELISA

Cortisol level: 5.0 ng/ml

9.5. R-R interval recordings

9.5.1. Heart rate variability data: physical stressor

Variable	Basal	ECR-R stressor	Standing
Statistical measures			
Mean RR (s)	0.58	0.60	1.20
RR standard deviation (s)	0.02	0.02	0.06
Mean HR (1/min)	104.10	100.72	50.71
HR standard deviation (1/min)	3.67	3.36	5.68
Frequency domain results			
LF power (ms^2)	97.67	53.82	812.58
LF power n.u.	80.25	77.84	77.09
HF power (ms^2)	24.04	15.32	241.52
HF power n.u.	19.75	22.16	22.91
LF/HF ratio	4.06	3.51	3.36
Total power (ms^2)	145.61	71.95	1201.33

9.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	1.14	1.13
RR standard deviation (s)	0.05	0.04
Mean HR (1/min)	52.75	53.43
HR standard deviation (1/min)	3.05	3.06
Frequency domain results		
LF power (ms^2)	1225.95	299.63
LF power n.u.	84.67	64.10
HF power (ms^2)	221.90	167.78
HF power n.u.	15.33	35.90
LF/HF ratio	5.52	1.79
Total power (ms^2)	1516.37	578.21

9.6. Experiences in Close Relationships questionnaire

Attachment results

Anxiety score: 1.83

Avoidance score: 2.22

Attachment class: Secure

Control 10

10.1. Control health questionnaire

10.1.1. Personal information

Marital status: Married

Highest academic qualification: Grade 9

Work status: Not employed

Lifestyle: Occasionally uses alcohol

10.1.2. Anthropometrical data

Gender: Female
Age: 60 yrs
Mass: 68 kg
Height: 1.5 m
Body mass index: 30.22

10.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Hysterectomy	33 yrs

10.1.4. Medication

Name of medication	Dose	Frequency
Eltroxin	0.05 mg	2 per day

10.2. Review of current symptoms – questionnaire
No symptoms

10.3. Fibromyalgia Impact Questionnaire
FIQ total score: 0.00

10.4. ELISA
Cortisol level: 8.5 ng/ml

10.5. R-R interval recordings

10.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.02	0.98	0.99
RR standard deviation (s)	0.03	0.03	0.02
Mean HR (1/min)	58.96	61.76	60.83
HR standard deviation (1/min)	2.11	4.37	1.88
Frequency domain results			
LF power (ms^2)	116.78	431.72	55.40
LF power n.u.	36.42	83.80	42.49
HF power (ms^2)	203.84	83.45	74.98
HF power n.u.	63.58	16.20	57.51
LF/HF ratio	0.57	5.17	0.74
Total power (ms^2)	339.86	695.23	168.19

10.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.98	0.93
RR standard deviation (s)	0.03	0.03
Mean HR (1/min)	61.06	64.56
HR standard deviation (1/min)	2.25	2.39
Frequency domain results		
LF power (ms^2)	71.61	101.66
LF power n.u.	39.51	69.02
HF power (ms^2)	109.65	45.63
HF power n.u.	60.49	30.98
LF/HF ratio	0.65	2.23
Total power (ms^2)	209.73	168.35

10.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.00
Avoidance score: 1.00
Attachment class: Secure

Control 11

11.1. Control health questionnaire

11.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Not employed
Lifestyle: Exercise 60 minutes, 6 times a week

11.1.2. Anthropometrical data

Gender: Female
Age: 39 yrs
Mass: 65 kg
Height: 1.71 m
Body mass index: 22.23

11.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: endometriosis (15 yrs)

Operations and hospitalisations:	Age
Remove lump on left lob of thyroid	34 yrs
Hysterectomy	31 yrs

11.1.4. Medication

Name of medication	Dose	Frequency
Eltroxin	0.05 mg	2 per day

11.2. Review of current symptoms – questionnaire

Low back pain

11.3. Fibromyalgia Impact Questionnaire

FIQ total score: 0.00

11.4. ELISA

Cortisol level: 9.0 ng/ml

11.5. R-R interval recordings

11.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.22	1.16	1.11
RR standard deviation (s)	0.06	0.06	0.07
Mean HR (1/min)	49.53	51.80	54.18
HR standard deviation (1/min)	2.53	3.30	4.03
Frequency domain results			
LF power (ms^2)	301.96	1002.74	328.92
LF power n.u.	20.52	45.81	18.52
HF power (ms^2)	1169.68	1186.26	1447.41
HF power n.u.	79.48	54.19	81.48
LF/HF ratio	0.26	0.85	0.23
Total power (ms^2)	1487.19	2270.48	1801.72

11.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	1.08	1.08
RR standard deviation (s)	0.06	0.07
Mean HR (1/min)	55.69	55.88
HR standard deviation (1/min)	3.43	3.95
Frequency domain results		
LF power (ms^2)	710.08	894.29
LF power n.u.	59.55	76.27
HF power (ms^2)	482.24	278.23
HF power n.u.	40.45	23.73
LF/HF ratio	1.47	3.21
Total power (ms^2)	1328.55	1378.03

11.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.00
Avoidance score: 1.17
Attachment class: Secure

Control 12

12.1. Control health questionnaire

12.1.1. Personal information

Marital status: Married
Highest academic qualification: Grade 11
Work status: Never employed
Lifestyle: Exercise 30 minutes, 3 times a week

12.1.2. Anthropometrical data

Gender: Female
Age: 40 yrs
Mass: 57 kg
Height: 1.65 m
Body mass index: 20.93

12.1.3 Medical background
Allergies: Wheat, sugar, preservatives
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Accident	36 yrs

12.1.4. Medication

Name of medication	Dose	Frequency
Ativan Trepiline	1 mg 10 mg	1 per day 1 per day

12.2. Review of current symptoms – questionnaire
Fatigue
Difficulty sleeping
Tongue problem
Heart palpitations
Tight muscles causing neck back aches
Menstrual cramps
Mild headaches

12.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	4.33	Fatigue:	2.00
Days not feeling good:	4.29	Not rested:	2.00
Work missed:	2.86	Stiffness:	3.00
Inability to perform job tasks:	6.00	Anxiety:	0.00
Pain:	4.00	Depression:	0.00
Total FIQ score:	28.48		

12.4. ELISA
Cortisol level: 5.5 ng/ml

12.5. R-R interval recordings
(recording discarded because control uses trepiline)

12.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.00
Avoidance score: 1.00
Attachment class: Secure

Control 13

13.1. Control health questionnaire

13.1.1. Personal information

Marital status: Divorced
Highest academic qualification: MSc degree
Work status: Employed
Lifestyle: Exercise 60 minutes, 2 times a week

13.1.2. Anthropometrical data

Gender: Female
Age: 49 yrs
Mass: 62 kg
Height: 1.6 m
Body mass index: 24.22

13.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Bunions removed	38 yrs
Hysterectomy	48 yrs

13.1.4. Medication
None

13.2. Review of current symptoms – questionnaire

Fatigue
Weight change
Sweats
Difficulty sleeping
Abnormal thirst
Light-headed
Difficulty concentrating
Vision problem
Tearing/ itching eyes
Shortness of breath on exertion
Tight muscles
Mild headaches
Irritable

13.3. Fibromyalgia Impact Questionnaire
(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	2.72	Fatigue:	1.00
Days not feeling good:	2.86	Not rested:	1.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	1.00	Anxiety:	1.00
Pain:	0.00	Depression:	2.00
Total FIQ score:	11.58		

13.4. ELISA
Cortisol level: 2.0 ng/ml

13.5. R-R interval recordings

13.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.81	0.77	0.76
RR standard deviation (s)	0.02	0.02	0.02
Mean HR (1/min)	74.41	78.12	79.53
HR standard deviation (1/min)	1.84	2.84	1.90
Frequency domain results			
LF power (ms^2)	76.23	122.58	86.27
LF power n.u.	62.64	72.12	69.05
HF power (ms^2)	45.46	47.39	38.66
HF power n.u.	37.36	27.88	30.95
LF/HF ratio	1.68	2.59	2.23
Total power (ms^2)	125.62	196.63	133.75

13.5.2. Heart rate variability data: psychological stressor
(subject preferred not to fill out ECR-R)

13.6. Experiences in Close Relationships questionnaire
Subject preferred not to fill out ECR-R.

Control 14

14.1. Control health questionnaire

14.1.1. Personal information

Marital status: Married
Highest academic qualification: Diploma
Work status: Employed
Lifestyle: Occasionally uses alcohol
Exercise 30 minutes, 5 times a week

14.1.2. Anthropometrical data

Gender: Female
Age: 39 yrs
Mass: 65 kg
Height: 1.63 m
Body mass index: 24.46

14.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: tumor (age 43), endometriosis (age 30)

Operations and hospitalisations:	Age
Appendicectomy	12 yrs
Hysterectomy	38 yrs
Removed melanoma	43 yrs

14.1.4. Medication
None

14.2. Review of current symptoms – questionnaire

Light-headed	Can't get full breath
Rashes	Irregular heart rhythm
Itching ears	Ackle swelling
Hearing problem	Sore neck, shoulders and low
Ringing in ears	back
Dizziness	Numbness and tingling

14.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	0.00	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	1.00
Pain:	6.00	Depression:	0.00
Total FIQ score:	7.00		

14.4. ELISA

Cortisol level: 8.0 ng/ml

14.5. R-R interval recordings

14.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	0.78	0.81	0.77
RR standard deviation (s)	0.03	0.03	0.03
Mean HR (1/min)	77.00	74.77	78.33
HR standard deviation (1/min)	2.78	3.69	2.96
Frequency domain results			
LF power (ms^2)	116.25	189.47	88.54
LF power n.u.	33.20	40.49	33.16
HF power (ms^2)	233.95	278.53	178.46
HF power n.u.	66.80	59.51	66.84
LF/HF ratio	0.50	0.68	0.50
Total power (ms^2)	359.30	493.62	286.39

14.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.75	0.68
RR standard deviation (s)	0.02	0.02
Mean HR (1/min)	80.44	88.61
HR standard deviation (1/min)	2.27	2.88
Frequency domain results		
LF power (ms^2)	25.78	19.58
LF power n.u.	19.93	35.27
HF power (ms^2)	103.58	35.93
HF power n.u.	80.07	64.73
LF/HF ratio	0.25	0.55
Total power (ms^2)	145.28	57.06

14.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 2.06
Avoidance score: 2.78
Attachment class: Secure

Control 15

15.1. Control health questionnaire

15.1.1. Personal information

Marital status: Married
Highest academic qualification: Doctoral degree
Work status: Employed
Lifestyle: Uses alcohol daily
Exercise 60 minutes, 4 times a week

15.1.2. Anthropometrical data

Gender: Female
Age: 52 yrs
Mass: 64 kg
Height: 1.69 m
Body mass index: 22.41

15.1.3 Medical background

Allergies: None
Current illnesses: None
Illnesses of the past: None

Operations and hospitalisations:	Age
Chest operation	20 yrs
Caesarian section	27 yrs
Caesarian section	30 yrs

15.1.4. Medication

Name of medication	Dose	Frequency
Eltroxin	0.1 mg	1 per day

15.2. Review of current symptoms – questionnaire
Low back pain

15.3. Fibromyalgia Impact Questionnaire

(each scale out of 10)

Scale	Score	Scale	Score
Physical impairment:	1.00	Fatigue:	0.00
Days not feeling good:	0.00	Not rested:	0.00
Work missed:	0.00	Stiffness:	0.00
Inability to perform job tasks:	0.00	Anxiety:	0.00
Pain:	0.00	Depression:	0.00
Total FIQ score:	3.33		

15.4. ELISA

Cortisol level: 3.0 ng/ml

15.5. R-R interval recordings

15.5.1. Heart rate variability data: physical stressor

Variable	Supine	Sitting	Standing
Statistical measures			
Mean RR (s)	1.082866	0.996525	0.829136
RR standard deviation (s)	0.030387	0.034701	0.019576
Mean HR (1/min)	55.5161	60.3894	72.4952
HR standard deviation (1/min)	2.114	2.9291	2.1453
Frequency domain results			
LF power (ms^2)	360.2111	187.4427	120.6435
LF power n.u.	76.7845	53.7746	87.77
HF power (ms^2)	108.9087	161.1283	16.8179
HF power n.u.	23.2155	46.2254	12.2346
LF/HF ratio	3.3075	1.1633	7.1735
Total power (ms^2)	514.49	376.73	162.19

15.5.2. Heart rate variability data: psychological stressor

Variable	Basal	ECR-R stressor
Statistical measures		
Mean RR (s)	0.826499	0.847435
RR standard deviation (s)	0.024977	0.025441
Mean HR (1/min)	72.8102	70.8882
HR standard deviation (1/min)	2.9295	2.3346
Frequency domain results		
LF power (ms^2)	233.3989	313.7646
LF power n.u.	80.0804	73.3187
HF power (ms^2)	58.0569	114.1818
HF power n.u.	19.9196	26.6813
LF/HF ratio	4.0202	2.7479
Total power (ms^2)	320.04	442.18

15.6. Experiences in Close Relationships questionnaire

Attachment results
Anxiety score: 1.39
Avoidance score: 1.72
Attachment class: Secure