Final report on the effectiveness of the AEQ programmes

led by Aleš Ernst.

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Contents

1. PURPOSE OF THE STUDY AND THE HYPOTHESES

This paper examines the differences within the dimension of chronic pains (Patient Heatlh Questionnaire PHQ 15) before and after participation in an AEQ programme. It also looks at the relationship between this dimension and the dimensions of the Systemic Therapy Inventory of Change (see below).

We also wished to establish how participation in AEQ programmes affected participants' chronic pains, and which dimensions of the Systemic Therapy Inventory of Change (see below) were related to the dimension of chronic pains (and to what extent).

The study was carried out on programmes conducted by Aleš Ernst, founder and Level 5 teacher of the AEQ method; the results can therefore not be extrapolated to include AEQ programmes led by teachers of lower levels, or to address the effectiveness of somatics, clinical somatics or the Feldenkreis method.

Hypothesis 1: On average, participation in AEQ programmes reduces the level of chronic pains

Hypothesis 2: The dimension of chronic pains is most strongly related to the sub-dimensions of the dimension of individual problems and strengths.

2. PARTICIPANTS

A total of 749 participants were involved in the study: 541 women (72%) and 208 men (28%). The youngest participant was 24 and the oldest 71 years old. The average age of the participants was 44.57, with a standard deviation of 10.14. Participants aged 41 years accounted for the biggest single age group. The sample included 271 married participants (37%), 236 unmarried participants living with a partner (32%), 134 single participants (18%), 86 separated participants (12%) and 6 widowed participants (1%).

Two participants had completed primary school education, 142 had completed secondary school education (19%), 35 had completed academic secondary school education/gimnazija (5%), 63 had completed vocational college education (9%), 135 had completed college education (17%), 325 had completed university or a Bologna Master's degree (45%), 23 had completed a Master's degree in science (3%) and 11 had completed a doctorate (2%).

Table 1 shows how long the participants had been concerned about their chronic health problems.

Table 1: Number and share of participants in relation to length of time in which they had been concerned about cronic pains

	Number	Share
1–3 months	31	4%
3–6 months	35	5%
6 months–1 year	79	11%
1–2 years	118	**16%**
More than 2 years	464	**64%**
Total	727	100%

We asked the participants how much time they spent thinking about themselves, their behaviour, their thoughts and feelings, AEQ exercises, resolving their own personal problems, and the reasons for and solutions to their problems. Their responses are shown in Table 2.

Table 2: Number and respective shares of participants' responses to the question: how much time do you spend thinking about yourself, your behaviour, your thoughts and feelings, AEQ exercises, and the reasons for and solutions to your problems

	Number	Share
Very little time	8	2%
Not much time	14	3%
A moderate amount of time	79	16%
A lot of time	170	34%
A very large amount of time	190	38%
All the time	40	8%
Total	501	100%

Fifty-one per cent of participants (373) had never undergone physiotherapy, 18% (135) had undergone physiotherapy for between one and three months, 10% (77) had undergone physiotherapy for between six months and one year, 12% (89) had undergone physiotherapy for between one and three years, and 9% (63) had undergone physiotherapy for more than three years.

The average value of the dimension of cronic pains among participants prior to the start of the AEQ programme was 8.68. A comparative study using the same questionnaire in Slovenia produced an average value of 5.37 (Petkovič, 2019), while a study of the general population in Germany produced an average value of 3.80 (Kocevant et al., 2013).

3. MEASUREMENT TOOLS

3.1 Cronic pains

The Patient Health Questionnaire (PHQ-15; Pfizer Inc, 1990s) is a self-assessment questionnaire that is used as a screening instrument for somatisation disorder and for monitoring the severity of somatic symptoms in clinical practice and studies (Iheme et al., 2014). It is derived from the complete PHQ created by Kroenke, Spitzer, Williams and Löwe (2010). We used it in our study to measure chronic pain. PHQ-15 was originally validated by Kroenke, Spitzer and Williams (2002). It includes 15 prevalent somatic symptoms (stomach pain, back pain, chest pain, pain in the arms, legs and joints, difficulties sleeping, feelings of fatigue or lack of energy, weakness, wind and other digestive problems, constipation or diarrhoea, pain or problems during sexual intercourse, shallow breathing, accelerated heart beat, fainting, dizziness, headaches, menstrual cramps and other menstrual problems) that represent more than 90% of symptoms at the primary health care level. Respondents rank the severity of their symptoms on a three-point scale (0 = did not bother me at all, 1 = bothered me a little, 2 = bothered me a lot). The questionnaire has good internal consistency (Cronbach's alpha = 0.80) (Kroenke et al., 2002) and has been translated into and is used in several languages (Leonhart et al., 2018). In our study the internal consistency is 0.73 measured using the Cronbach's alpha coefficient.

3.2 Systemic Therapy Inventory of Change

Our study used the Systemic Therapy Inventory of Change (Pinsof et al., 2005), hereinafter referred to as STIC. This questionnaire assesses in detail the situation regarding individual problems and strengths, relationship with one's partner, current family and family of origin (FOO). These four areas of study are also the four main dimensions of the questionnaire. The participants in the study assess individual questions (items) on a five-point Likert-type scale.

The 'family of origin' dimension contains 21 questions divided into the following sub-dimensions: mutuality and clarity of expectations, positivity, negativity, intrusiveness, and the presence of physical abuse and substance abuse.

The dimension of relationship with one's partner comprises 25 questions divided into the following sub-dimensions: commitment to the relationship, positivity in the relationship, sexual satisfaction in the relationship, trust or betrayal in the relationship, anger and inequity in the relationship, physical abuse in the relationship and substance abuse in the relationship.

The dimension of current family comprises 28 questions divided into the following sub-dimensions: boundary clarity, decision-making, family pride, positivity, physical abuse, feeling misunderstood and negativity.

The dimension of individual problems and strengths comprises 22 questions divided into the following sub-dimensions: life functioning, open expression, self-acceptance, disinhibition, negative affects, self-misunderstanding and substance abuse.

3.3 Process

The study commenced in September 2021 and was completed in July 2022. Nine AEQ programmes were held in this period and were led by Aleš Ernst, Level 5 teacher of the AEQ method. Each AEQ programme lasts one month. AEQ programme participants completed a survey three days after starting and three days after completing an AEQ programme. In October and December 2021 and in March and June 2022, we also sent the survey for completion to those who had taken part in an AEQ programme in 2020 and up to June 2021. However, they only received the survey if they were not currently involved in an AEQ programme. The programme participants were first invited to complete the survey by the head of the AEQ

programme. This was followed up by a further written invitation by email. The results were calculated using the SPSS 20 software package.

4. RESULTS

4.1 Descriptive statistics of all dimensions, determination of the test to confirm the differences and determination of the correlation coefficient

Table 3: Descriptive statistics for all the dimensions used in the Patient Health Questionnaire (PHQ) and the Systemic Therapy Inventory of Change (STIC)

	N	Min	Max	M	SD
MUS	603	0	24	7.81	4.23
FOO_CLARITY_MUTUALITY_EXPECTATIONS	720	2	10	6.58	1.82
FOO_POSITIVITY	725	5	25	14.59	4.80
FOO_ABUSE_sex_and_phy	711	3	15	6.23	2.80
FOO_INTRUSIVENESS	722	2	10	5.38	2.22
FOO_NEGATIVITY	720	5	25	15.51	4.53
FOO_SUBSTANCE_ABUSE	717	4	18	6.44	2.41
PART_COMMITMENT	504	2	10	8.30	1.70
PART_POSITIVITY	513	10	45	35.17	6.81
PART_SEX_SATISF	514	2	10	7.68	2.00
PART_TRUST	516	3	15	12.64	2.41
PART_ANGER_INEQUITY	512	4	20	8.57	3.02
PART_PHYSICAL_ABUSE	519	2	10	2.28	1.07
PART_SUBSTANCE_ABUSE	517	2	10	2.66	1.22
FAMILY_BOUNDARY_CLARITY	563	2	10	7.56	1.53
FAMILY_AGREEMENT_DECISION-MAKING	495	2	10	8.23	1.68
FAMILY_PRIDE	570	2	10	7.95	1.98
FAMILY_POSITIVITY	571	10	45	36.42	6.69
FAMILY_PHY_ABUSE	577	3	15	3.48	1.32
FAMILY_FEELING_MISUNDERSTOOD	575	2	10	4.64	2.05
FAMILY_NEGATIVITY	563	8	40	15.10	6.11
IND_FLEXIBILITY_RESILIENCE	728	3	15	10.37	1.98
IND_LIFE_FUNCTIONING	724	2	10	6.97	1.63
IND_OPEN_EXPRESSION	728	2	10	7.08	1.65
IND_CLARITY_SELF-ACCEPTANCE	728	2	10	6.86	1.65
IND_DISINHIBITION	725	3	13	4.42	1.67
IND_NEGATIVE_AFFECTS	720	6	30	12.89	4.15
IND_SELF-MISUNDERSTANDING	725	2	10	4.89	1.71

IND_SUBSTANCE_ABUSE	731	2	8	2.37	0.89

Notes: N – number of participants, Min – minimum value, Max – maximum value, M – average value, SD – standard deviation, MUS – cronic pains, FOO_CLARITY_MUTUALITY_EXPECTATIONS – mutuality and clarity of expectations in the family of origin, FOO_POSITIVITY – positivity in the family of origin, FOO_NEGATIVITY – negativity in the family of origin, FOO_INSTRUSIVENESS – intrusiveness of members of the family of origin, FOO_ABUSE_sex_and_phy – presence of physical abuse in the family of origin, FOO_SUBSTANCE_ABUSE – substance abuse, PART_COMMITMENT – commitment to relationship with partner, PART_POSITIVITY – positivity in relationship with partner, PART_SEX_SATISF – sexual satisfaction in relationship with partner, PART_TRUST – trust or betrayal in relationship with partner, PART_ANGER_INEQUITY – anger and inequity in relationship with partner, PART_PHYSICAL_ABUSE – physical abuse in relationship with partner, PART_SUBSTANCE_ABUSE – substance abuse in relationship with partner, FAMILY_BOUNDARY_CLARITY – boundary clarity in current family, FAMILY_AGREEMENT_DECISION-MAKING – decision-making in current family, FAMILY_PRIDE – pride in current family, FAMILY_POSITIVITY – positivity in current family, FAMILY_PHY_ABUSE – physical abuse in current family, FAMILY_ FEELING_MISUNDERSTOOD – feeling of being misunderstood in current family, FAMILY_NEGATIVITY – negativity in current family, IND_FLEXIBILITY_RESILIENCE – flexibility or resilience, IND_LIFE_FUNCTIONING – life functioning, IND_ OPEN_EXPRESSION – openness of self-expression, IND_CLARITY_SELF-ACCEPTANCE – self-acceptance, IND_DISINHIBITION– absence of inhibition of strong impulses, IND_NEGATIVE_AFFECTS – expression of negative affects, IND_SELF-MISUNDERSTANDING – self-misunderstanding, IND_SUBSTANCE_ABUSE – substance abuse

We checked the normality of the distribution of the dimensions. The Kolmogorov-Smirnov test, the Lilliefors-corrected Kolmogorov-Smirnov test and the Shapiro-Wilks test for normality showed that all the dimensions of both questionnaires deviated from normal distribution (sig = 0.000). We therefore used non-parametric tests or correlation coefficients for the calculations. We used the Mann-Whitney U-test or the Krushal-Wallis H-test to establish the differences in the cronic pains according to the time the survey was completed. We used the Spearman correlation coefficient to study the relationships between the dimensions.

4.2 Differences in cronic pains according to the time the survey was completed

In this study we were most interested in finding out whether there was a statistically significant difference in the level of chronic pains before and after participation in an AEQ programme. The results are shown in Table 4 and in the graph in Figure 1. The statistical significance of the difference is shown in Table 4.

Table 4: Differences in cronic pains before and after participation in an AEQ programme, number of survey respondents and statistical significance of the difference

When the survey was completed	M	N	SD	Sig
At the start of the AEQ programme	8.68	233	4.24	
After completion of the AEQ programme	7.61	197	4.42	0.006
3 months after completion of the AEQ programme	6.74	87	3.39	0.000
6 months after completion of the AEQ programme	7.23	39	4.40	0.001
9 months after completion of the AEQ programme	6.58	45	3.80	0.001

Notes: M – average value, N – number of participants, SD – standard deviation, Sig – statistical significance

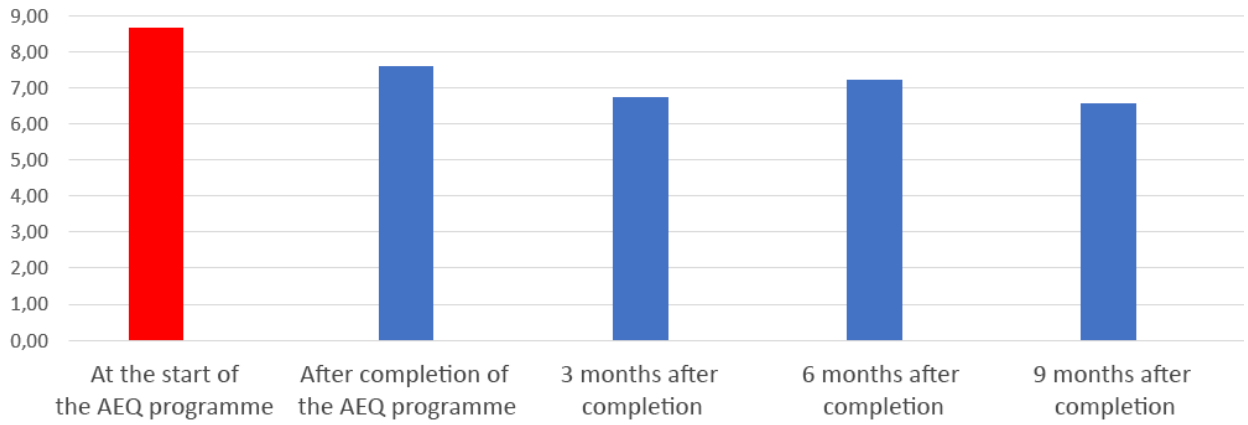

Figure 1. Differences in cronic pains before and after participation in an AEQ programme (three, six and nine months after completion of an AEQ programme)

Hypothesis 1: The graph in Figure 1 shows and Table 4 confirms a statistically significant difference in cronic pains before and after participation in an AEQ programme. We can therefore fully confirm the first hypothesis.

4.3 Correlations

Table 5: Correlation coefficients of the MUS dimension with the sub-dimensions of family of origin

		FOO_CLARITY_MUTUALITY_EXPECTATIONS	FOO_POSITIVITY	FOO_ABUSE_sex_and_phy	FOO_INTRUSIVENESS	FOO_NEGATIVITY	FOO_SUBSTANCE_ABUSE
	Correl. coeff.	-.092*	-.263**	.235**	.195**	.312**	.076
MUS	Sig	.025	.000	.000	.000	.000	.064
	N	597	599	593	598	596	596

Notes: MUS – cronic pains, Correl. coeff. – correlation coefficient, Sig – statistical significance, N – number of participants, ** – statistical significance at the level of 1%, FOO_CLARITY_MUTUALITY_EXPECTATIONS – mutuality and clarity of expectations in the family of origin, FOO_POSITIVITY – positivity in the family of origin, FOO_NEGATIVITY – negativity in the family of origin, FOO_INTRUSIVENESS – intrusiveness of members of the family of origin, FOO_ABUSE_sex_and_phy – presence of physical abuse in the family of origin, FOO_SUBSTANCE_ABUSE – substance abuse

Table 6: Correlation coefficients of the MUS dimension with the sub-dimensions of relationship with partner

		PART_COMMITMENT	PART_POSITIVITY	PART_SEX_SATISF	PART_TRUST	PART_ANGER_INEQUITY	PART_PHYSICAL_ABUSE	PART_SUBSTANCE_ABUSE
MUS	Correl. coeff.	-.158**	-.190**	-.173**	-.174**	.172**	0.064	-0.005
	Sig	0.001	0.000	0.000	0.000	0.000	0.179	0.915
	N	433	438	439	441	438	443	442

Notes: MUS – cronic pains, Correl. coeff. – correlation coefficient, sig – statistical significance, N – number of participants, ** – statistical significance at the level of 1%, PART_COMMIT – commitment to relationship with partner, PART_POSITIVITY – positive atmosphere in relationship with partner, PART_SEX_SATISF – sexual satisfaction in relationship with partner, PART_TRUST – trust or betrayal in relationship with partner, PART_ANGER_INJUSTICE – anger and inequity in relationship with partner, PART_PHYSICAL_ABUSE – physical abuse in relationship with partner, PART_ABUSE_SUBSTANCES – abuse of substances in relationship with partner

Table 7: Correlation coefficients of the MUS dimension with the sub-dimensions of current family

		FAMILY_AGREEMENT_DECISION-MAKING	FAMILY_PRIDE	FAMILY_POSITIVITY	FAMILY_PHYSICAL_ABUSE	FAMILY_FEELING_MISUNDERSTOOD	FAMILY_NEGATIVITY	FAMILY_SEXUAL_ABUSE
	Correl. coeff.	-.043	-.102*	-.173**	.168**	.170**	.189**	-.172**
MUS	Sig	.374	.026	.000	.000	.000	.000	.000
	N	423	483	485	489	489	478	491

Notes: MUS – cronic pains, Correl. coeff. – correlation coefficient, sig – statistical significance, N – number of participants, ** – statistical significance at the level of 1%, FAMILY_BOUNDARY_CLARITY – clarity of boundaries in current family, FAMILY_AGREEMENT_DECISION-MAKING – decision-making in the current family, FAMILY_PRIDE – pride in the current family, FAMILY_POSITIVITY – positivity in the current family, FAMILY_PHY_ABUSE – physical abuse in the current family, FAMILY_FEELING_MISUNDERSTOOD – feeling of being misunderstood in current family, FAMILY_NEGATIVITY – negativity in current family

Table 8: Correlation coefficients of the MUS dimension with the sub-dimensions of individual problems and power

		IND_FLEXIBILITY_RESILIENCE	IND_LIFE_FUNCTIONING	IND_OPEN_EXPRESSION	IND_CLARITY_SELF-ACCEPTANCE	IND_DISINHIBITION	IND_NEGATIVE_AFFECTS	IND_SELF-MISUNDERSTANDING	IND_SUBSTANCE_ABUSE
	Correl. coeff.	-.378**	-.430**	-.274**	-.419**	.325**	.565**	.321**	.048
MUS	Sig	.000	.000	.000	.000	.000	.000	.000	.243
	N	602	598	602	602	599	597	600	602

Notes: MUS – cronic pains, Correl. coeff. – correlation coefficient, sig – statistical significance, N – number of participants, ** – statistical significance at the level of 1%, IND_FLEXIBILITY_RESILIENCE – flexibility or resilience, IND_LIFE_FUNCTIONING – life functioning, IND_OPEN_EXPRESSION – openness of self-expression, IND_CLARITY_SELF-ACCEPTANCE – self-acceptance, IND_DISINHIBITION – absence of inhibition of strong impulses, IND_NEGATIVE AFFECTS – expression of negative affects, IND_FEELING_MISUNDERSTOOD – feeling misunderstood, IND_SUBSTANCE_ABUSE – substance abuse

Tables 5, 6, 7 and 8 show the relationships between the MUS dimension and all sub-dimensions of the STIC. The following are highlighted as the strongest relationships:

- 0.565 IND_NEGATIVE_AFFECTS – expression of negative affects
- −0.430 IND_LIFE_FUNCTIONING – life functioning
- −0.419 IND_CLARITY_SELF-ACCEPTANCE – self-acceptance
- −0,378 IND_FLEXIBILITY_RESILIENCE – flexibility/resilience
- 0.325 IND_DISINHIBITION – absence of inhibition of strong impulses
- 0.321 IND_SELF-MISUNDERSTANDING – self-misunderstanding
- 0.312 FOO_NEGATIVITY – negativity in the family of origin
- −0.274 IND_OPEN_EXPRESSION – openness of self-expression
- −0.263 FOO_POSITIVITY – positivity in the family of origin

Hypothesis 2: Tables 5, 6, 7 and 8 show that the dimension of cronic pains is most strongly related to the sub-dimensions of the dimension of individual problems and strengths. Hypothesis 2 can therefore be confirmed.

Keywords: AEQ programme, cronic pains, feelings, medically unexplained symptoms, somatization

References:

Cvetek, R. 2013. *Raziskujemo medosebne odnose : priročnik za izvedbo kvantitativne empirične raziskave* (Exploring inter-personal relations: Handbook for quantitative empirical research). Ljubljana: Faculty of Theology

Kocalevent, R.D., Hinz, A., & Brähler, E. 2013. Standardization of the depression screener patient health questionnaire (PHQ-9) in the general population. General Hospital Psychiatry, 35(5), 551–555.

Kreš, B. 2016. Analiza sprememb pri udeležencih v relacijski družinski terapiji in ključni trenutki teh sprememb z vidika udeležencev (Analysis of changes among participants in relational family therapy and the key moments of these changes from the participants' point of view), doctoral dissertation. Faculty of Theology, University of Ljubljana, Ljubljana.

Kroenke, K., Spitzer, R. L., Williams, J. B. and Löwe, B. 2010. The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. General Hospital Psychiatry, 32, 345–359.

Kroenke, K., Spitzer, R. L. and Williams, J. B. 2002. The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms. Psychosomatic Medicine, 64(2), 258–266.

Petrovčič, A. 2019. Povezanost telesne aktivnosti, psihosomatskih simptomov in prezentizma (The relationship of physical activity, psychosomatic symptoms and presenteeism), Master's thesis. Faculty of Arts, University of Ljubljana, Ljubljana.

Pfizer Inc, 1990s, The Patient Health Questionnaire – PHQ-15. The original questionnaire is available online at: https://www.phqscreeners.com/sites/g/files/g10049256/f/201412/English_0.pdf

Pinsof, Willeam M., Richard E. Zinbarg, Jay L. Lebow, Lynne M. Knobloch-Fedders, Emily Durbin, Anthony L. Chambers, Tara Latta, Eli Karam, Jacob Goldsmith, Greg B. A. Frewdman and Barton Mann. 2009. Laying the foundation for progress research in family, couple and individual therapy: The development and psychometric features of the initial systemic therapy inventory of change. Psychotherapy Research 19, No 2, 143–156.