

THE EFFECTIVENESS OF FAMILY CONSTELLATION THERAPY IN REDUCING PSYCHOPATHOLOGICAL SYMPTOMS IN A NATURALISTIC SETTING

Barna Konkoly Thege^{1,2}, Benedek Somogyi³ & Gergely Sándor Szabó³

¹Waypoint Research Institute, Waypoint Centre for Mental Health Care, Penetanguishene, Ontario, Canada

²Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada

³Department of Clinical Psychology, Károli Gáspár University of the Reformed Church in Hungary, Budapest, Hungary

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SUMMARY

Background: The aim of this study (ClinicalTrials.gov identifier: NCT03233958) was to provide further evidence on the effectiveness and safety of family/systemic constellation therapy, a widely used but rarely investigated form of brief group psychotherapy.

Subjects and methods: Altogether, 102 individuals from the general population were followed up 1- and 6 months after their participation in the 2-day intervention. Indicators of general and problem-area-specific psychopathology, interpersonal quality of life, meaning in life, and general wellbeing were assessed. Both statistical and clinical significance were considered, and active surveillance of potential iatrogenic effects was also conducted.

Results: The data showed significant improvement post-intervention in the case of the vast majority of the 17 outcome variables. At 1-month follow-up, the magnitude of improvements was typically in the moderate range. The patterns were very similar at the 6-month follow-up, suggesting that most intervention benefits were sustained in the middle term. Sensitivity analyses showed no therapist effects across the three intervention providers. Analyses into clinical significance showed that the most reliable improvements occurred in relation to interpersonal quality of life and non-diagnosis-specific psychopathology, with approximately half of the participants showing reliable improvement. Iatrogenic effects were comparable - both in terms of frequency and severity - to those reported for other forms of psychotherapy.

Conclusions: Findings of the present study point toward the safety and effectiveness of family constellation therapy in reducing a variety of psychopathological symptoms (e.g., depression and anxiety) and increasing general well-being. This effectiveness is especially remarkable when considering the brevity and cost-effectiveness of the intervention.

Key words: family constellation therapy - systemic constellations – effectiveness - clinical significance - tolerability

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INTRODUCTION

Family / systemic constellation therapy is a short-term group counseling intervention aiming to help clients better understand and resolve their conflicts within their personal systems, which in turn might lead to a decrease in psychopathological or functional somatic symptoms (Hellinger 2003). The personal system addressed is most often the family but other inter- or intrapersonal systems (e.g., ego parts, victim-perpetrator dyads) can also be the target of the intervention; the term “family constellation therapy” is used throughout the manuscript in this broader sense. This therapeutic modality has become particularly popular in Europe and South America and has even become part of the public health care system in certain countries (Franco de Sá et al. 2019).

Compared to its use by thousands of therapists of various theoretical and professional backgrounds all over the world, little effort has been made to generate empirical data regarding the effectiveness and safety of this intervention. The very limited number of previous

prospective, peer-reviewed studies into family constellation therapy’s therapeutic efficacy / effectiveness reported that the intervention was effective in reducing general, non-diagnosis-specific psychopathology and psychological distress (Hunger et al. 2015, Krüger & Schmidt-Michel 2003, Weinhold et al. 2013), decreasing the intensity of dermatological symptoms (Jaffery et al. 2019), as well as improving quality of life and functioning in interpersonal relationships (Hunger et al. 2014, 2015).

A recent systematic review on family constellation therapy (Konkoly Thege et al. 2021) concluded that further studies into its effectiveness are greatly needed. The identified evidence gaps included the use of 1) at least a mid-term time frame (≥ 6 months) to evaluate client outcomes, 2) the active monitoring (not just passive surveillance) of potential iatrogenic effects, and 3) the investigation of potential therapist effects. In line with these recommendations, the aim of the present study was to collect and analyze further data from the real life setting on family constellation therapy’s tolerability and effectiveness in improving mental health.

SUBJECTS AND METHODS

Participants and procedure

The protocol of this study has been approved by the Research Ethics Board of Károli Gáspár University (25/2017/P) and was pre-registered with ClinicalTrials.gov (identifier: NCT03233958). Participants of the study were recruited in Hungary among individuals from the general population who expressed their intent to participate in a 2-day family constellation workshop on a fee-for-service basis (private setting) with one of the three professionals participating in the study. The overall participation rate in the participant recruitment period (considering all service users seeking family constellation therapy with the three intervention providers) was 34.1% with regards to the baseline study sample (N=182) and 19.1% in relation to only those who completed all three assessments (N=102). All three intervention providers were highly trained both in general mental health care delivery (one therapist with a background in clinical psychology, while the other two in medicine) and family constellation therapy (10-20 years of experience). Participation in the study was voluntary and occurred as a combination of online and paper-pencil data collection after participants gave their informed, written consent. Neither the therapists, nor the participants received financial compensation for their participation.

The assessment protocol included a pre-intervention assessment, a follow-up approximately 4 weeks after the intervention (this time is estimated to be necessary in order for the single-occasion, 2-day workshop to have most of its effects; cf. the focus on changes in perceived quality of interpersonal relationships and related mental health symptoms), and finally six months post-intervention. Significant efforts were made (follow-up email and three attempted phone calls) to encourage participants to complete the questionnaires at both follow-up assessment points; however, the retention rate remained low.

Altogether, 182 individuals completed the baseline assessment (T1), out of which 118 were retained (retention rate: 65%) at the 4-week follow-up (T2) and 102 (retention rate: 56%) at the 6-month follow-up (T3). Completers and drop-outs at T3 did not differ across sex, age, and marital status; however, there were marginally significantly more individuals with post-secondary education among those dropping out (Table 1). Out of the 17 quantitative outcome variables, those dropping out at T3 showed significantly less favorable baseline scores in relation to somatization (Brief Symptom Inventory: $p=0.012$, Patient Health Questionnaire-15: $p=0.031$) and anxiety ($p=0.012$); however, the magnitude of the differences was small.

Intervention

The intervention was administered in a group setting in which approximately 15-25 participants, unknown to each other, met for a one-time, 2-day, facilitator-led workshop. Each constellation starts with a brief interview between the facilitator and the active client to clarify the individual's goal with the intervention. This is followed by a decision about which members/elements of the client's (inter)personal system play a significant role in the issue presented and these are represented by other group members during the constellation. The representatives (including the client's representative) are positioned in the room by the client initially, with spatial distances, angles, and body postures meant to correspond to the client's inner image of the system ("problem constellation"). This allows the facilitator to identify the dynamics beneath the client's presenting concern, while at the same time helps the client reflect on their internal experience from a more objective, partially external point of view (as they are observers and not participants at this point). This part of the process is largely non-verbal, focusing on what participants begin to experience as being part of the structure created by the active client (cf. Orban 2008).

Table 1. Sociodemographic characteristics of the sample, stratified by study completion status

	Completers (n=102)	Drop-out (n=80)	Comparison
Sex (N (%))			$\chi^2=0.006$,
Male	17 (16.7)	13 (16.3)	$p=0.940$,
Female	85 (83.3)	67 (83.8)	$V=0.006$
Age (M (SD))	39.5 (9.1)	40.3 (9.9)	$U=3888.5$,
			$p=0.587$,
			$r=0.040$
Educational attainment (N (%))			$\chi^2=3.815$,
Secondary	26 (25.5)	11 (13.8)	$p=0.051$,
Post-secondary	76 (74.5)	69 (86.3)	$V=0.145$
Marital status (N (%))			$\chi^2=0.199$,
Single	31 (30.4)	25 (31.3)	$p=0.978$,
In relationship without cohabiting	15 (14.7)	15 (13.8)	$V=0.033$
Married / common law	40 (39.2)	33 (41.3)	
Separated / divorced	16 (15.7)	11 (13.8)	

Next, the representatives are asked by the therapist about their physical sensations, feelings, and thoughts they have while in their positions. Rearrangements, spatial adjustments, and brief, ritualized conversations are made based on the principles of healthy functioning within a system until a constellation is identified that offers a resolution or relief for the client (who at this point might become an active participant of the constellation if they feel ready to do so). Ideally, this “solution constellation” provides a new, more adaptive framework for the client to feel, think, and behave in the given system (Hunger et al. 2015).

Measures

Sociodemographic and qualitative variables

To assess sociodemographic characteristics, questions were administered to assess participants' sex, age, relationship/marital status, and educational attainment (response options are displayed in Table 1). A couple of free-text questions were also asked to participants to explore their intentions with the intervention (T1, What problem or issue motivated you to come to the family constellation workshop?) and potential iatrogenic effects (T2 & T3, Have you experienced any negative change in relation to your mental or physical health during or since the family constellation workshop?). If respondents answered affirmatively to the second question, it was also asked if they believed the changes were associated with their participation in family constellation therapy (yes, no, or unsure) and only those negative changes were considered, which respondents believed were indeed caused by the intervention or about which they were unsure.

Brief Symptom Inventory (BSI)

The Hungarian version (Urbán et al. 2014) of the BSI (Derogatis & Spencer 1993) was used to measure an individual's overall psychopathology level. This tool consists of 53 items covering nine symptom dimensions: somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Out of the three global measures of pathology and distress, the General Severity Index (GSI, mean of all items) was used in the present study. Internal consistency coefficients of the BSI subscales in the present sample were typically in the acceptable (Anxiety: $\alpha_{\text{Mean T1,T2,T3}} = 0.70$) to very good range (Depression: $\alpha_{\text{Mean T1,T2,T3}} = 0.84$), with the exception of Phobic Anxiety ($\alpha_{\text{Mean T1,T2,T3}} = 0.56$) and the General Severity Index ($\alpha_{\text{Mean T1,T2,T3}} = 0.95$).

SCOFF

The Hungarian version (Dukay-Szabó et al. 2016) of the SCOFF screening test (Morgan et al. 2000) was used to measure non-disorder-specific risk level for eating disorders. At least two positive answers (score of 2) indicate a high likelihood of an eating disorder

(Dukay-Szabó et al. 2016). Considering the low number of items and the yes-or-no type response format, internal consistency of this scale was suboptimal but acceptable in the present study (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.58$).

Patient Health Questionnaire-15 (PHQ-15)

The Hungarian version (Stauder et al. 2021) of the PHQ-15 (Kroenke et al. 2002) was used to evaluate the intrusiveness of somatic symptoms and a tendency toward somatization. The assessment tool contains 15 items, each addressing a frequently occurring mild, physical symptom such as back pain or trouble sleeping. Internal consistency of the PHQ-15 was good in the present sample (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.76$).

Ad hoc items to assess addiction severity

In the absence of a concise and validated, broad-focus screening tool to assess the severity of both substance-related and behavioral addiction problems, a 4-item ad hoc tool was created for the purposes of the present study. One question each referred to the past-month frequency of substance use and excessive behaviors, while further two questions explored the extent to which participants perceived that their substance use or excessive behaviors caused problems in their lives. Internal consistency of these ad hoc items was suboptimal (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.65$) but acceptable considering the brevity of the tool.

Experience in Personal Social Systems Questionnaire (EXIS.pers)

The Hungarian version (Konkoly Thege 2022) of the EXIS.pers (Hunger et al. 2017) was used to assess the subjective experiences of the individual in their personal social system (e.g. family, circle of friends). Internal consistency of this 12-item scale was excellent in the present study (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.94$).

Meaning in Life Questionnaire (MLQ)

The Hungarian version (Martos & Konkoly Thege 2012) of the MLQ (Steger et al. 2006) was used to assess both the *presence of* and *search for* meaning in a respondent's life as eudaimonic wellbeing indicators. While the former is an indicator of positive mental health, the latter is typically considered as an indicator of ill mental health and therefore, higher scores indicate less favorable mental status. The scale consists of 10 items (5 items measuring both subconstructs). Both the Presence (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.92$) and the Search (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.84$) subscales showed high internal consistency in the present sample.

WHO Well-being Index (WBI-5)

The Hungarian (Susánszky et al. 2006), 5-item version of the WHO Well-being Index (Bech et al. 1996) was used to measure participants' overall subjective well-being as a hedonic indicator of wellbeing. Internal consistency of the scale was excellent in the present study (Cronbach's $\alpha_{\text{Mean T1,T2,T3}} = 0.88$).

Data analysis

All analyses were carried out using SPSS for Windows, Version 27. Baseline characteristics of study completers versus drop-outs were compared using the Mann-Whitney U (age) and the chi squared (categorical variables) test. Effect size was expressed using effect size r (Mann-Whitney U test) and Cramer's V (Chi squared test). Considering the non-normal distribution and occasionally ordinal nature (SCOFF) of the outcome variables, effectiveness of the intervention was investigated using Wilcoxon paired sample test in the primary analyses. Separate comparisons were made to explore potential changes from baseline to 4-week post-intervention as well as baseline to 6-month follow-up. Effect size r was computed to express the magnitude of the changes.

Given that the normality assumption is relatively rarely examined and therefore parametric tests are used most often in effectiveness research, to facilitate inter-study comparability, repeated measures ANOVAs were also conducted as secondary analyses to investigate the main effect of time considering all three assessment points. For similar reasons, means and standard deviations (instead of medians and inter-quartile ranges) were reported as descriptive data to allow easier comparisons across studies. A further set of ANOVAs were also run to investigate therapist-effects. In these secondary analyses, effect size was expressed by eta squared.

The Reliable Change Index (RCI) was used to examine the clinical significance of changes on the individual level. Given the uncontrolled nature of the current study's design, a metric was chosen that considers the tendency of regression to the mean, a threat to the validity of effectiveness studies without a control group. For this reason, the Edwards-Nunnally method was used to examine the reliability of changes over time (Bauer et al. 2004).

RESULTS

Primary quantitative analyses regarding effectiveness

In relation to the 4-week follow-up (Table 2), the primary analyses showed statistically significant improvements in the case of 14 out of the 17 outcome variables, with effect sizes ranging from small (somatization assessed by the BSI, search for meaning in life, and overall wellbeing) through moderate (obsession-compulsion, interpersonal sensitivity, depression, hostility, phobic anxiety, psychoticism, somatization assessed by the PHQ-15, and quality of life in the personal social system) to large (anxiety, paranoid ideation, and overall psychopathology). The observed improvements were not statistically significant in the case of eating disorder risk ($p=0.090$), addiction severity

($p=0.216$), and perceived level of meaning in life ($p=0.118$), in which cases the effect sizes were small.

The patterns were very similar at 6-month follow-up: improvements were statistically significant in the case of 13 variables with somewhat decreased effect sizes. Improvements were small in the case of phobic anxiety, eating disorder risk, and perceived level of meaning in life; moderate in relation to obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, psychoticism, paranoid ideation, quality of life in the personal social system, and overall wellbeing; while large in the case of overall psychopathology (Table 2). The observed improvements were not statistically significant in the case of somatization assessed both by the BSI ($p=0.062$) and the PHQ-15 ($p=0.052$), addiction severity ($p=0.075$), and search for meaning in life ($p=0.162$), in which cases the effect sizes were small but not trivial.

The analyses to investigate clinical significance showed that on average across all indicators, 19.8% of participants (ranging from 0.9% for eating disorder risk to 53.4% for overall psychopathology) improved reliably at the 1-month follow-up (Table 3). The same value was 20.3% at the 6-month follow-up (ranging from 2.9% for phobic anxiety to 48.0% for quality of life in the personal social system). Reliable deterioration was observed, on average across mental health indicators, in 6.1% of participants at the 1-month follow-up and 7.6% at the 6-month follow-up (Table 3).

Secondary quantitative analyses regarding effectiveness

Using the parametric repeated measures ANOVA, in the case of 13 out of 17 variables, the main effect of time was significant (Table 2). The effect sizes varied between small (somatization: $\eta^2=0.037$) and large (overall psycho-pathology: $\eta^2=0.234$) – with the majority being in the moderate (6 outcomes) and large (5 outcomes) range. The variables where improvements after the intervention did not reach statistical significance were presence ($p=0.197$) and search for meaning in life ($p=0.072$), as well as eating disorder risk ($p=0.076$) and addiction severity ($p=0.147$) level. Effect size in these cases were small (eta squared values between 0.016 and 0.026).

To investigate therapist effects, all models were rerun using therapist identity as a between-subject factor. In case of no outcome variable, the interaction between time and the therapist's identity was significant [p values varied between 0.170 and 0.979 ($M=0.571$, $SD=0.258$)]. Effect sizes for the time x therapist interaction term ranged between eta squared values of 0.003 and 0.032 ($M=0.015$, $SD=0.009$), indicating negligible to small variation in outcomes across therapists.

Table 2. Changes after participation in family constellation therapy across indicators of psychopathology and psychological wellbeing

Outcome variable (assessment tool)	Descriptive data			Primary analyses		Secondary analyses
	Baseline M (SD)	4-week follow-up M (SD)	6-month follow-up M (SD)	Baseline vs. 4- week follow-up (n=118)	Baseline vs. 6- month follow-up (n=102)	Main effect of time across 3 time points (n=102)
Somatization (BSI)	0.51 (0.62)	0.38 (0.59)	0.41 (0.52)	z=3.03 p=0.002 r=0.279	z=1.87 p=0.062 r=0.185	F=3.86 p=0.023 η ² =0.037
Obsession- compulsion (BSI)	0.98 (0.70)	0.76 (0.72)	0.77 (0.73)	z=5.12 p<0.001 r=0.471	z=3.55 p<0.001 r=0.352	F=10.55 p<0.001 η ² =0.095
Interpersonal Sensitivity (BSI)	0.94 (0.78)	0.60 (0.70)	0.60 (0.78)	z=5.14 p<0.001 r=0.473	z=4.50 p<0.001 r=0.445	F=17.96 p<0.001 η ² =0.151
Depression (BSI)	1.38 (0.95)	0.95 (0.92)	1.01 (0.89)	z=4.62 p<0.001 r=0.425	z=4.23 p<0.001 r=0.419	F=17.42 p<0.001 η ² =0.147
Anxiety (BSI)	0.97 (0.64)	0.62 (0.60)	0.63 (0.58)	z=5.78 p<0.001 r=0.532	z=5.00 p<0.001 r=0.495	F=23.83 p<0.001 η ² =0.191
Hostility (BSI)	0.76 (0.67)	0.52 (0.66)	0.48 (0.55)	z=4.48 p<0.001 r=0.412	z=4.44 p<0.001 r=0.440	F=12.96 p<0.001 η ² =0.114
Phobic anxiety (BSI)	0.46 (0.49)	0.30 (0.44)	0.35 (0.44)	z=4.40 p<0.001 r=0.405	z=2.21 p=0.027 r=0.219	F=6.25 p=0.004 η ² =0.058
Paranoid ideation (BSI)	0.84 (0.70)	0.54 (0.67)	0.53 (0.65)	z=5.98 p<0.001 r=0.551	z=4.88 p<0.001 r=0.483	F=18.32 p<0.001 η ² =0.154
Psychoticism (BSI)	0.62 (0.62)	0.42 (0.61)	0.43 (0.69)	z=4.81 p<0.001 r=0.444	z=3.76 p<0.001 r=0.372	F=10.86 p<0.001 η ² =0.097
Overall psycho- pathology (BSI)	0.82 (0.51)	0.56 (0.53)	0.58 (0.53)	z=6.74 p<0.001 r=0.620	z=5.34 p<0.001 r=0.528	F=30.79 p<0.001 η ² =0.234
Eating disorder risk (SCOFF)	0.65 (1.00)	0.55 (0.91)	0.47 (0.90)	z=1.69 p=0.090 r=0.156	z=2.11 p=0.035 r=0.209	F=2.61 p=0.076 η ² =0.025
Somatization (PHQ-15)	6.89 (4.26)	5.55 (4.33)	6.35 (4.71)	z=4.26 p<0.001 r=0.392	z=1.94 p=0.052 r=0.192	F=6.63 p=0.002 η ² =0.062
Addiction severity (ad hoc items)	6.73 (3.10)	6.35 (2.43)	6.22 (2.65)	z=1.24 p=0.216 r=0.116	z=1.78 p=0.075 r=0.179	F=2.00 p=0.147 η ² =0.021
Search for meaning (MLQ)	22.42 (7.35)	20.70 (8.46)	21.41 (8.20)	z=2.55 p=0.011 r=0.235	z=1.40 p=0.162 r=0.138	F=2.67 p=0.072 η ² =0.026
Presence of meaning (MLQ)	22.87 (8.37)	23.79 (8.95)	23.94 (8.44)	z=1.56 p=0.118 r=0.144	z=2.24 p=0.025 r=0.222	F=1.66 p=0.197 η ² =0.016
Quality of life in personal social system (EXIS)	44.97 (11.33)	49.67 (13.76)	50.52 (13.42)	z=4.00 p<0.001 r=0.368	z=4.70 p<0.001 r=0.465	F=14.03 p<0.001 η ² =0.122
Wellbeing (WBI-5)	8.01 (3.27)	9.10 (3.29)	9.26 (3.46)	z=3.14 p=0.002 r=0.289	z=3.30 p=0.001 r=0.327	F=8.96 p<0.001 η ² =0.081

Table 3. Number of participants (%) with reliable change after participation in family constellation therapy across indicators of psychopathology and psychological wellbeing

	4-week follow-up (n=118)			6-month follow-up (n=102)		
	Deteriorated	Unchanged	Improved	Deteriorated	Unchanged	Improved
Somatization (BSI)	6 (5.08)	88 (74.58)	24 (20.34)	7 (6.86)	83 (81.37)	12 (11.76)
Obsession-compulsion (BSI)	5 (4.24)	97 (82.20)	16 (13.56)	6 (5.88)	81 (79.41)	15 (14.71)
Interpersonal Sensitivity (BSI)	4 (3.39)	93 (78.81)	21 (17.80)	7 (6.86)	69 (67.65)	26 (25.49)
Depression (BSI)	8 (6.78)	77 (66.25)	33 (27.97)	7 (6.86)	65 (63.73)	30 (29.41)
Anxiety (BSI)	4 (3.39)	86 (72.88)	28 (23.73)	2 (1.96)	78 (76.47)	22 (21.57)
Hostility (BSI)	6 (5.08)	94 (79.66)	18 (15.25)	3 (2.94)	82 (80.39)	17 (16.67)
Phobic anxiety (BSI)	3 (2.54)	106 (89.83)	9 (7.63)	6 (5.88)	93 (91.18)	3 (2.94)
Paranoid ideation (BSI)	3 (2.54)	100 (84.75)	15 (12.71)	3 (2.94)	83 (81.37)	16 (15.69)
Psychoticism (BSI)	5 (4.24)	98 (83.05)	15 (12.71)	5 (4.90)	84 (82.35)	13 (12.75)
Overall psychopathology (BSI)	8 (6.78)	47 (39.83)	63 (53.39)	9 (8.82)	43 (42.16)	50 (40.02)
Eating disorder risk (SCOFF)	5 (4.24)	112 (94.92)	1 (0.85)	5 (4.90)	89 (87.25)	8 (7.84)
Somatization (PHQ-15)	4 (3.39)	92 (77.97)	22 (18.64)	11 (10.78)	77 (75.49)	14 (13.73)
Addiction severity (ad hoc items)	6 (5.08)	109 (92.37)	3 (2.54)	6 (5.88)	89 (87.25)	7 (6.86)
Search for meaning (MLQ)	12 (10.17)	79 (66.95)	27 (22.88)	14 (13.73)	60 (58.82)	28 (27.45)
Presence of meaning (MLQ)	15 (12.71)	79 (66.95)	24 (20.34)	16 (15.69)	62 (60.78)	24 (23.53)
Quality of life in personal social system (EXIS)	16 (13.56)	55 (46.61)	47 (39.83)	11 (10.78)	42 (41.18)	49 (48.04)
Wellbeing (WBI-5)	13 (11.02)	73 (61.86)	32 (27.12)	14 (13.73)	61 (59.80)	27 (26.47)

Qualitative analyses regarding treatment goals and iatrogenic effects

Free-text answers of the respondents at baseline indicated that most participants attended the intervention to seek help with individual mental health issues (36.4%; e.g., anhedonia, anxiety, low self-esteem) or to resolve internal or interpersonal conflicts in relation to family members (35.8%; e.g., to improve relationship with current partner, parents, children). The remaining participants hoped to improve their physical health (8.7%; e.g., infertility, chronic pain, allergy) or become more able to manage current transitions or decisions in their lives as a result of the intervention (2.9%), while 16.2% of respondents indicated more than one goal from the previous categories.

At the 1-month follow-up, 89% of participants reported no negative change in their mental or physical health during or after the intervention, 2.5% reported mild psychological complaints which they did not exclude or believed to be related to the intervention (e.g., confusion, feelings of helplessness), 3.4% reported some physical health deterioration (e.g., worse sleep quality, nausea, optic nerve dysfunction), while further 5.1% reported still mild but both somatic and mental health complaints they could imagine being associated with the intervention (e.g., increased depression combined with incident heart arrhythmia, general sense of lost control in life paired with incident amenorrhea, and anhedonia along with chronic exhaustion).

At the 6-month follow-up, 84.3% of participants reported the absence of negative mental or physical health changes, 5.9% reported mild negative psychological

changes in the follow-up period which they did not exclude or believed to be related to the intervention (e.g., slightly more severe addictive symptoms, increased tensions in marriage, increased fear of aging), 7.8% reported physical health deterioration (e.g., unintended weight gain, exhaustion, hemorrhoids, or hypothyroidism), while a further 2.0% reported both somatic and mental health changes they did not exclude as being associated with the intervention (avolition combined with exhaustion, increased intensity of negative affect experienced in combination with unintended weight gain and exhaustion).

DISCUSSION

The American Psychological Association's Task Force on Psychological Interventions recommends that after successful efficacy studies using randomized controlled designs, studies on effectiveness in the real life setting should follow to better understand how effective psychological interventions are in every-day clinical practice (Chambless & Hollon 1998). Given the evidence supporting the efficacy of family constellation therapy in improving general psychological functioning in the general population (Hunger et al. 2014, Weinhold et al. 2013), the aim of the present study was to provide data from the real life setting on the effectiveness and tolerability of family constellation therapy, a widely used (Cohen 2006) but rarely investigated form of brief group counseling intervention.

The results of the present study – being the first evaluating the effectiveness of family constellation therapy in reducing psychopathology outside Germany, the country where the intervention was developed –

showed statistically significant improvement after participation in the intervention in the vast majority of outcome variables. At the 1-month follow-up, the magnitude of the improvements was typically in the moderate range with some exceptions showing only small or on the contrary, large effect sizes. The patterns were very similar at the 6-month follow-up, suggesting that most intervention benefits of family constellation therapy are sustained in the middle term. The analyses into therapist effects indicated that beneficial changes after the intervention were independent of service provider identity.

Some of the variables reflecting no treatment benefit included less prevalent clinical conditions: addiction severity and eating disorder risk. Beyond the possibility that the intervention is simply ineffective in these regards, there are multiple other explanations for these phenomena including poor psychometric characteristics of the assessment tools (cf. low internal consistency of the SCOFF or the ad hoc addiction assessment tool) and the low occurrence of clinically relevant symptomatology at baseline. For example, in a sensitivity analysis in the subsample of those with above-cut-off SCOFF score ($n=18$), the omnibus test showed a statistically significant and large effect of time ($F=11.32$, $p<0.001$, $\eta^2=0.400$) and the post hoc tests also indicated statistically significant and large improvements both at the 1- ($z=2.65$, $p=0.008$, $r=0.61$) and 6-month ($z=3.14$, $p=0.002$, $r=0.74$) follow-up. This pattern raises the possibility that family constellation therapy could be effective for eating disorders as well if investigated in a clinical sample of individuals struggling with this issue. A further variable not showing consistent and significant improvement was meaning in life, which is surprising given the intervention's explicit focus and demonstrated efficacy in improving interpersonal relationships, which are amongst the major sources of meaning in life. Finally, the improvements regarding somatic symptoms were also inconsistent (faded away for the 6-month follow-up), which might be related to the larger likelihood of incident health problems as the follow-up becomes longer (cf. the large variety of physical concerns the assessment tools cover).

Analyses into clinical significance showed that the most reliable improvements occurred in relation to quality of life and functioning in interpersonal relationships as well as non-diagnosis-specific psychopathology, with approximately half of participants showing reliable improvement. The value for overall psychopathology reported here (53% at 1-month follow-up) is only slightly lower than that (61-62% at treatment completion) obtained from a large-scale implementation study on cognitive behavioral therapy (6 sessions on average) considering a composite indicator of anxiety and depression symptoms (Clark et al. 2018).

Considering occasional concerns regarding the risks of family constellation therapy (referring to the fact that it can generate strong emotional responses in

a very condensed time frame while no follow-up care is involved), another major focus of our work was to collect data on tolerability. The findings in relation to clinically significant changes indicated reliable deterioration, on average across all indicators, in 6.1% of participants at the 1-month follow-up and 7.6% at 6-month, which is again comparable to data obtained from a study investigating the large scale implementation of cognitive behavioral therapy in similar populations (treatment seeking individuals with mild to moderate severity of psychopathology), where the reliable deterioration rate at treatment completion was 6.6% (Gyani et al. 2013).

Subjective reports of potential iatrogenic effects also pointed toward a risk level similar to those reported for other forms of psychotherapy (Curran et al 2019): mild to moderately severe negative outcomes were reported by 11-16% of respondents; however, even as respondents indicated, it is hard to verify the link between the intervention and certain adverse changes (e.g., unintended weight gain, incident heart arrhythmia, hypothyroidism, or optic nerve dysfunction). Many of the reported undesirable effects though seemed to have greater face validity (e.g., confusion and overall loss of direction in life, increased level of conflict in certain relationships). Consequently, it seems warranted that intervention providers 1) call participants' attention to the potential need for post-intervention care (if participants are from the general population and therefore in no other mental health treatment); or 2) integrate family constellation therapy into complex treatment programs right from the beginning (if participants are from clinical populations receiving other forms of mental health care; cf. Brömer et al. 2020, Krüger & Schmidt-Michel 2003, Mahr & Brömer 2008).

Strengths of the present study include the strict adherence to an a priori, publicly registered protocol, the relatively large sample size (the second largest ever in relation to family constellation therapy), the involvement of multiple intervention providers, the dual focus on both statistical and clinical significance when evaluating effectiveness, and the active monitoring of potential iatrogenic effects using both a standardized questionnaire and free text data.

However, the results of the present study should also be seen in the light of numerous limitations. The most important shortcoming of the present study is the non-controlled nature of its design and thus the possibility that the reported beneficial changes are the results of external factors (e.g., regression to the mean) and not the intervention itself (cf. to this date, only three controlled studies have been completed on the efficacy of family constellations in improving mental health). However, it is worthy of note that the vast majority of changes in scores occurred in the time frame needed for the intervention to take its effects (i.e., between baseline and 1-month follow-up) and not between the first and second follow-up, the latter of

which – considering the longer time frame – would have been more consistent with natural recovery or other, non-intervention-related factors. Further, pooled effect sizes for treatment effectiveness in terms of general psychopathology did not differ significantly between controlled and non-controlled studies in a preliminary meta-analysis synthesizing data from both the gray and the peer-reviewed literature (Konkoly Thege et al. 2021). Finally, data on the natural course of mental disorders in waitlist control groups indicate that time in itself leads only to negligible improvement in the mid-term (Leichsenring & Rabung 2006, Steinert et al. 2017). These considerations combined make it reasonable to assume that the emerging beneficial changes over time may be attributable to the intervention itself, although further, controlled studies are needed to verify this claim.

A further limitation of the present study is the low participation rate of men (even if it corresponds to anecdotal evidence on the real-life gender ratio of intervention participants) and the large attrition rate limiting the generalizability of the findings to all family constellation participants. Finally, some of the measures in this study (those assessing phobic anxiety, eating disorder risk, and addiction severity) could be characterized by suboptimal psychometric properties; therefore, the results obtained with their use should be interpreted with increased caution.

CONCLUSIONS

Despite its limitations, the present study points toward the effectiveness of family constellation therapy in reducing a large variety of psychopathological symptoms among treatment seeking individuals with mild to moderate level of psychopathology. This effectiveness is especially remarkable when considering that the length of an individual's constellation rarely takes longer than 30-60 minutes and participation fees for a 2-day workshop are comparable with that of 2-3 individual psychotherapy sessions (depending on country and service provider). Future studies with controlled designs and potentially more homogenous clinical samples are needed to provide more definitive answers for whom family constellation therapy is most effective either in terms of supporting recovery from mental disorders or just facilitating a happier and more fulfilling life.

Contribution of individual authors:

Barna Konkoly Thege: study conception, design, material preparation, data analysis, data interpretation, first draft of manuscript.

Benedek Somogyi: data collection, data analysis.

Gergely Sándor Szabó: study conception, design, material preparation, data collection.

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Correspondence:

Barna Konkoly Thege, MA, PhD

Waypoint Research Institute, Waypoint Centre for Mental Health Care

500 Church Street, Penetanguishene, Ontario, L9M 1G3, Canada

E-mail: bkonkoly-thege@waypointcentre.ca; konkoly.thege.barna@gmail.com