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Evaluation of the implementation of the Meeting Centres Support Program in Italy, Poland, and the UK; exploration of the effects on people with dementia

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Objectives: MEETINGDEM investigated whether the Dutch Meeting Centres Support Programme (MCSP) could be implemented in Italy, Poland, and the UK with comparable benefits. This paper reports on the impact on people living with dementia attending pilot Meeting Centres in the 3 countries.

Methods: Nine pilot Meeting Centres (MCs) participated (Italy—5, Poland—2, UK—2). Effectiveness of MCSP was compared with Usual Care (UC) on outcomes measuring behavioural and psychological symptoms (NPI), depression (CSDD), and quality of life (DQoL, QOL-AD), analysed by ANCOVAs in a 6-month pre-test/post-test controlled trial.

Results: Pre/post data were collected for 85 people with dementia and 93 carers (MCSP) and 74 people with dementia /carer dyads' receiving UC. MCSP showed significant positive effects for DQoL [Self-esteem ($F = 4.8$, $P = 0.03$); Positive Affect ($F = 14.93$, $P < 0.00$); Feelings of Belonging ($F = 7.77$, $P = 0.01$)] with medium and large effect sizes. Higher attendance levels correlated with greater neuropsychiatric symptom reduction (rho = 0.24, $P = 0.03$) and a greater increase in feelings of support (rho = 0.36, $P = 0.001$).

Conclusions: MCSPs showed significant wellbeing and health benefits compared with UC, building on the evidence of effectiveness from the Netherlands. In addition to the previously reported successful implementation of MCSP in Italy, Poland, and the UK, these findings suggest that further international dissemination of MCSP is recommended.

KEYWORDS

adaptation-coping model, dementia, Meeting Centres Support Programme, post-diagnostic support, psychosocial interventions

1 | INTRODUCTION

Many national dementia strategies recommend the early and timely diagnosis of dementia. Earlier diagnosis provides the opportunity for people to make lifestyle changes and choices that will build resilience for the long term. However, people often feel overwhelmed and confused about where to get help. Relatively few interventions exist that focus on supporting both the person diagnosed with dementia and their family carer, whereas evidence suggests that combined interventions are often more beneficial than single interventions.[1-3] The Meeting Centres Support Programme (MCSP) is a way of providing accessible support on a local level that focuses on both the person living with dementia and their family. The MCSP is a way of providing accessible early support on a local level and provides a means of meeting the needs of people in the post-diagnostic stage. MCSP was developed, in collaboration with people with dementia and carers, following a community needs assessment in the Netherlands 25 years ago.[4,5] Typically, MCSP serves a local community of around 5000 older people. The Meeting Centre (MC) "club" is offered 3 days per week, supporting 10 to 15 people plus families in easily accessible community locations. Evidence-based post-diagnostic psychosocial interventions are provided in a friendly manner, tailored to the needs of the local members. This is facilitated by a small team of staff and volunteers trained in the ethos of person centred dementia care, informed by the Adaptation-Coping Model.[6,7] Carers (the principal caregiver, ie, the person most involved in the care which maybe the partner, a son or daughter, but also a friend or acquaintance) can get practical information, personal advice and emotional, social contact, and peer support. The local focus helps local agencies to collaborate effectively in helping people live well with dementia, thus counteracting the fragmentation of care.

In 2 Dutch multi-centre effect studies comparing people attending MCs with those attending regular day care, people utilising MCs displayed fewer behaviour problems, in particular less non-social behaviour and inactive behaviour, after 7 months.[4,8] Furthermore, there was a positive effect on depressive behaviour and self-esteem for people with dementia and also benefits for family carers.[5,9] Research in the Netherlands identified various factors that promoted successful implementation of MCSP.[10] An implementation guide, publications, films, and a training course for staff assisted organisations to set up MCSPs supported by a national helpdesk. As a result, MCSPs have spread across the country with more than 145 MCs in the Netherlands supporting 5500 people and their carers annually.

This paper reports on the JPND project MEETINGDEM[11] that aimed to transfer MCSP to Italy, Poland, and the UK, to investigate whether adaptations were needed to support successful implementation in these countries, and to evaluate if comparable benefits could be achieved. The adaptive implementation involved translating MCSP concepts and practicalities into a new country context. After exploring pathways to care,[12] pilot MCs were successfully implemented in all countries in 2015 following a 12-month period of collaborative community engagement and adaptation.[13] Within each participating country, a national project team conducted a standardised implementation study and assessed the impacts on people living with dementia and their family carers to ascertain if the results were comparable with those found in the Netherlands. Participants reported high levels of satisfaction with the support provided.[14] In this paper, we focus on the impact of MCSP on social, behavioural, and emotional functioning of people living with dementia.

Key points

- The Meeting Centres Support Programme (MCSP) was developed in the Netherlands 25 years ago to provide local community support both to people living with dementia and their family carers. It has proven benefits and now supports nearly 5500 people per year across the Netherlands.
- Meeting Centres were successfully implemented in Italy, Poland, and the UK utilising the Dutch model and adapting MCSP to country specific needs and contexts
- After 7 months attending the Meeting Centres people living with dementia reported significant improvements in self-esteem, positive affect and feelings of belonging. Higher levels of attendance were correlated with a greater reduction in distressing behaviour symptoms and greater feelings of support.
- The MCSP is transferable across different countries and shows benefits for people living with dementia at home.

2 | METHOD

2.1 | Design

As with the original Dutch Effect study, a pre/post-test control group design was used comparing outcomes for people with dementia and family carers attending the MCSP with a Usual Care (UC) control group on several outcome measures. Measures were taken at pre-test (within 1 month of starting to attend the MC or UC) and again after 6 months. Taking into account attrition of 15% over this period, it was determined that 75 persons with dementia/family carer dyads should be recruited to each arm (Total 150; 25 per arm in each of the 3 countries). This number was based on the results of previous effect studies into MCSP, in which moderate to large effects were found, and a power calculation: to demonstrate moderate effects (d = 0.5), with a power of 0.80 and alpha 0.05. Changes over time that may have impacted on the outcomes (illness, physical disability, significant medication changes, and the use of other types of support) were monitored. Reasons for drop out and life events were also recorded. The research underwent ethical review in the separate countries and was approved.

2.2 | Participants

The main target group for the MCSP were people with mild to moderately severe dementia, living at home, and having a carer prepared to

participate in the MCSP. There were no exclusions on age or type of dementia. Both people with dementia and carers self-reported on outcomes but carers also reported their perceptions of the social and emotional functioning of the person living with dementia. A separate paper details the impact on family carer outcomes measures.[15]

2.3 | Meeting Centres Support Programme intervention

Pilot MCs were successfully provided in specific geographic local communities in all 3 countries during 2015 to 2016, following a 12-month period of collaborative community engagement and preparatory work according to the Dutch step-wise implementation procedure.[13] This included 5 MCs in Italy (Lombardia and Emilia-Romagna regions), 2 in Poland (Wroclaw region), and 2 in the UK (Central England). It was not possible to explore the impact of all regions and jurisdictions within the countries. Materials and concepts developed in the Netherlands were translated. Compliance with the original MCSP model was maintained to a high degree, although several country adaptations were made, such as more flexibility of attendance to the programme according to need, severity of dementia of the target group, and additional therapeutic approaches.[12] The MC "club" was offered 3 days per week in the UK and Poland and 3 half-days to 2 days per week in Italy. A total of 10 to 15 dyads (people with dementia/family members) were supported per day. Participants for the research (MCSP group) were recruited from people with dementia planning to attend the MC at least 1 day per week.

2.4 | Usual Care

Within the original Dutch research, the UC group consisted of participants of Psychogeriatric Day Care units within Nursing homes and their carers. In the current study, the UC participants were recruited from a cohort group on a similar part of the dementia pathway within the same locality but outside the MC catchment area.

2.5 | Measures

Background information on age, education level, and gender was collected for all participants alongside (at pre- and posttest) information on individual factors (comorbidities, physical disability, psychotropic drug use, life events, use of other types of support) that may have influenced outcomes. The Global Deterioration Scale (GDS)[16] was used to determine severity of dementia on a 7-stage scale, the EQ-5D (mobility) as an indication for physical disability. Three of the standardised measures which were utilised in the original Dutch effects study were used in the current study to assist with comparison. The DQoL[17] is a 30-item interview used with the persons with mild to moderate dementia to assess the impact on quality of life, consisting of 5 subscales showing good internal consistency and test-retest reliability. All subscales are scored so that a higher score indicates a better quality of life. The Cornell Scale for Depression in Dementia (CSDD)[18] is a 19-item rating scale for assessing symptoms of depression in persons with dementia, observed in the week prior to the assessment. The Neuropsychiatric Inventory (NPI-Q)[19,20] assesses dementia-related behavioural, mood, and psychiatric symptoms. The severity of the symptoms and distress for the caregiver were assessed. In addition, the 13-item structured interview QOL-AD[21] was included as it can be answered by people with more advanced dementia.[22] The Duke Social Support Inventory (DSSI)[23] was used to assess feelings of social support.

The Polish versions of the NPI-Q[24] and the GDS[25] were used. The Italian versions of the NPI-Q[26] and the QOL-AD[27] were used. An existing Italian version of the GDS was utilized, but there have been no papers published on its validation. All measures for which no translation was available in Italian or Polish were translated and adapted according to WHO formal criteria for questionnaires.[28] Back translation of the Polish versions of the GDS, DQoL, CSDD, QOL-AD, and DSSI and back translations of the Italian versions of the DQoL, CSDD, and DSSI were undertaken to ensure fidelity.

2.6 | Procedures

A strong project management focus was employed throughout to ensure fidelity of the intervention to the original Dutch model and to maximise standardisation of research procedures across the different countries. Annual face-to-face meetings and monthly teleconferences occurred throughout the 3-year project. All MCSP members were invited to participate in the research by the MC Manager within the first 2 weeks of attendance. Participation in the research was entirely voluntary. For ethical and pragmatic reasons, it was not possible to undertake baseline measures prior to MC attendance. The DQoL, QOL-AD, and DSSI were administered by the researchers during an interview with the person with dementia. The NPI-Q was completed by the family carers. The GDS and CSDD were completed by the MC managers through interviews with the person with dementia and the family carer. Meeting Centre managers received training from the research team to do this. Italian, Polish, and English versions of measures and interviews were used. Participants who dropped out of the MC before post-test data collection were not included in the effect evaluation. For the UC group, all measures were administered by researchers in participants' own homes and the GDS and CSDD completed by a professional who knew the person. Follow-up data were collected using the same measures 6 months after the baseline data collection point.

2.7 | Data analysis

The aim of the analysis was to explore whether similar effects were found for these adaptively implemented MCs as had been found within the original Dutch effect study.[4] The current trial was exploratory in nature, being conducted during the cross country implementation study. Given the exploratory nature of the trial, and consequently the relatively small sample per country, a decision was made to run the same analyses as in the Netherlands and thus to do separate ANCOVA's with a *P*-value of 0.05 and to not apply a Bonferroni correction on each test because of multiple testing. This enabled us to make more direct comparisons with the original Dutch research and to evaluate the feasibility of MCSP in other European countries. Following a similar process to that adopted in the Dutch study,[4] the baseline characteristics of the participants in the MCSP and UC groups

were analysed descriptively with differences between the groups being tested (2-sided, alpha 0.05) by using t-tests (for ordinal and interval data that were normally distributed) and Chi2 tests (for nominal data). ANCOVA's and t-tests were used on the outcome measures data that had normal distribution. t-tests and Chi2 tests were undertaken to assess whether the MCSP intervention and UC control groups differed at baseline on characteristics such as gender, age, degree of dementia etc. Characteristics that differed significantly between the MCSP and UC at baseline and correlated with 1 or more outcome measure (potential confounding variables) were included as covariates in the analysis. The outcome measures data were analysed by covariance analyses (ANCOVAs) on the post-test measurements that included baseline measurements as covariates in the analysis. The data overall (all countries) were combined to assess differences between the MCSP and UC groups. Although the study was not sufficiently powered to fully test differences per country and between countries, we explored some of the differences between MCSP and UC groups at a country level (within the countries).

The ANCOVA analysis was conducted using the statistical package SPSS Version 23, where the options were selected to report the adjusted means and effect size in each case. Cohen's d effect sizes[29] were calculated for each ANCOVA. By using records of medication use, reported illness/significant life events for participants in the weeks before the post test, and use of other care and support services, it was assessed as to whether psychotropic medication, illness or life events, or the use of other types of support had influenced outcomes on a group basis. Spearman's rank correlation was undertaken on the outcome measures and attendance levels to further explore the effect of attendance on changes in outcomes over time for the MCSP group.

3 | RESULTS

3.1 | Numbers recruited to research

The numbers originally recruited, data collected at pre-test and post-test by country, are shown in Figure 1. Between pre-test and post-test measures, there was attrition of 27% in the MCSP group and 18% in the UC group. Those who dropped out tended to be slightly older and have more severe dementia. There were no significant characteristic differences in attrition between MCSP and UC groups. Data analysis was based on completed measures from 85 people with dementia attending the MC across Italy, Poland, and the UK, and 74 people with dementia receiving UC.

Recruitment to the MCSP group was through the MCs in the respective countries. Recruitment to the UC group was through health or welfare organisations (UK 3/41; Italy 15/25; Poland 17/24) or through GPs (UK 0/41; Italy 0/25; Poland 4/24) or through non-governmental/charitable support services (UK 31/41; Italy 10/25; Poland 1/24). A small number were recruited through other contacts (UK7/41; Italy 0/25; Poland 2/24).

3.2 | Participant characteristics

There were no significant differences between the participant characteristics in those recruited to either MCSP or UC (Table 1).

3.3 | Comparison of outcome measures for MCSP and UC

ANCOVAs were performed on all outcome measures overall and per country. Overall ANCOVAs and country specific results are summarised in Table 2. Severity of Dementia according to the GDS categories of Mild, Moderate, and Severe were included as an additional fixed factor within the analysis.

3.3.1 | Quality of life

The ANCOVA results indicate that compared with the UC group, the MCSP group benefitted most on quality of life (DQoL). Significant differences were recorded on the domains self-esteem, positive affect, and feelings of belonging, with medium to large effect sizes. There was a clear pattern within the DQoL scores either remaining stable or improving for the MCSP group over time whereas the pattern was much more mixed in the UC group. The ANCOVA did not show a statistically significant difference between the scores for the MCSP and UC groups on the QOL-AD for the countries overall.

3.3.2 | Depression

The ANCOVA did not show a significant difference between MCSP and UC for the CSDD.

3.3.3 | Neuropsychiatric symptoms

The ANCOVA did not show a significant difference between MCSP and UC at post-test. There were some differences in the changes in types of symptoms reported by the 2 groups over time (Table 3). There was an 11% increase in agitation for the UC group, whereas the MCSP group experienced a 7% reduction. The UC group showed a 10% increase in apathy, whereas the MCSP group only experienced a 2% increase. However, the changes were not all in a positive direction for the MCSP group. For example, the UC group experienced a 6% reduction in sleep disturbance, whereas the MCSP group experienced a 7% increase. Whilst these cannot be taken as evidence of effect of the intervention, they are of interest in that they provide a picture of the prevalence of these symptoms in both groups and the change in 6 months.

Feeling of Support: No significant difference between MC and UC groups was found for any of the sub-domains of the DSSI.

3.4 | MC attendance

How people utilised MCSP varied according to individual needs with some people utilising MCSP at every opportunity whereas others were infrequent users. The mean number of days' attendance over 6 months is shown in Table 4 overall and by countries. Secondary analysis using Spearman's rank correlation between frequency of attendance and the changes in outcome measures demonstrated a significant correlation between higher attendance and more positive changes in symptom severity on the NPI (rho = 0.24, $P = 0.03$). There was also a significant correlation between higher attendance and a greater change in Duke SSI sub-domain of feelings of support (rho = 0.36, $P = 0.001$).

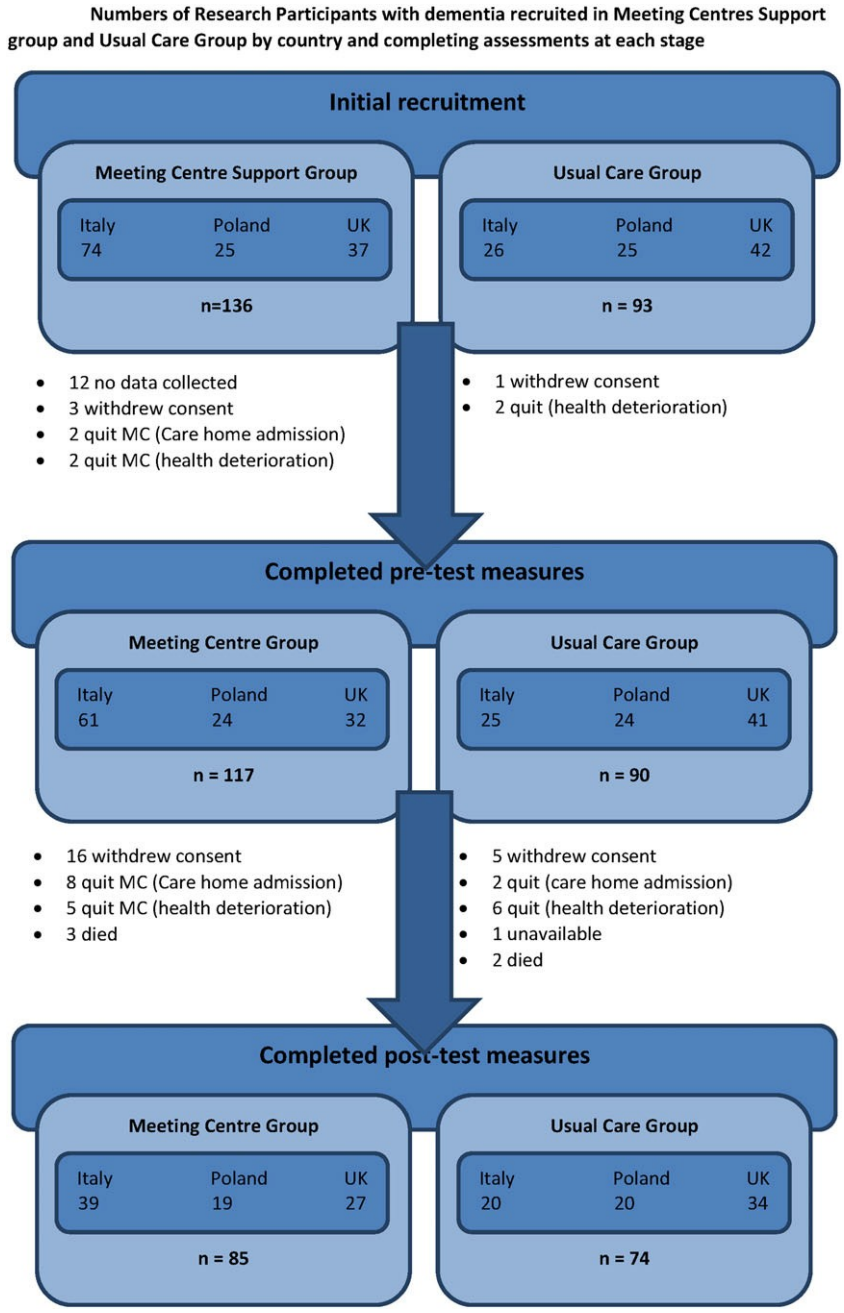

FIGURE 1 Numbers of research participants with dementia recruited to the Meeting Centres Support Group and the Usual Care Group by country and completing assessments at each stage [Colour figure can be viewed at wileyonlinelibrary.com]

TABLE 1 Data on persons with dementia using the Meeting Centres Support Programme (MCSP) and receiving Usual Care (UC)

		MCSP Group ($n = 85$)	UC Group ($n = 74$)	Test Statistic	P (2-Sided)
Sex	Male Female	36 (42.4%) 49 (57.6%)	34 (45.9%) 40 (54.1%)	$\chi^2 = 0.21$	0.65
Age	Mean age (standard deviation) Range <60 60-69 70–79 80+	78.4 (7.8) 63-93 - 15 (18.1%) 27 (32.5%) 41 (49.4%)	78.5 (7.3) 62-95 - 7 (9.6%) 34 (46.6%) 32 (43.8%)	$t = 1.98$ $\chi^2 = 4.20$	0.94 0.12
Civil status	Married/co-habiting/ civil partnership Widowed/divorced/ single	48 (56.5%) 37 (43.5%)	48 (66.7%) 24 (33.3%)	$\chi^2 = 1.71$	0.19
Severity of dementia (GDS score)	Mean score (standard deviation) Median score (range)	4.0 (1.1) 4 (2-7)	3.7 (1.1) 4 (1-6)	t = 1.98	0.11
Primary care giver	Spouse/partner Daughter/son Other	45 (52.9%) 30 (35.3%) 10 (11.8%)	43 (58.1%) 28 (37.8%) 3 (4.1%)	$\chi^2 = 3.14$	0.21

TABLE 2 Outcome measures and results of ANCOVAs using pre-test and post-test means for Meeting Centre Support Programme (MCSP) and Usual Care (UC) groups

Measure (Numbers in MCSP/UC)			Pre-Test MCSP mean (SD)	Pre-Test UC mean (SD)	Post-Test MCSP mean (SD)	Post-Test UC mean (SD)	Post-Test ANCOVA Adjusted MC/UC Mean	F	P	Effect Size d
D-QOL sub domains (range of scores)	Sense of aesthetics (5–25)	Overall (n = 82/69)	18.3 (3.6)	17.7 (5.1)	19.4 (3.8)	18.6 (5.2)	18.8/18.3	0.56	0.46	0.13
		Italy (n = 37/20)	18.3 (3.7)	16.4 (4.5)	19.8 (4.1)	17.1 (4.6)	20.5/18.8	2.19	0.15	0.41
		Poland (n = 19/18)	18.1 (3.3)	18.3 (4.5)	19.0 (3.1)	18.6 (3.6)	19.1/18.5	0.35	0.56	0.20
		UK (n = 26/31)	18.6 (4.0)	18.3 (5.8)	19.1 (4.0)	19.6 (6.3)	18.5/18.6	0.03	0.87	0.06
	Self-esteem (4–20)	Overall (n = 78/65)	13.5 (3.4)	13.4 (2.8)	14.3 (3.1)	13.1 (3.7)	14.2/13.1	4.80	0.03*	0.38
		Italy (n = 35/20)	14.5 (3.3)	13.0 (2.3)	15.4 (2.8)	13.3 (2.6)	15.4/13.8	3.76	0.06	0.55
		Poland (n = 19/18)	12.5 (3.3)	13.5 (2.9)	13.6 (2.7)	14.1 (3.7)	13.9/13.7	0.07	0.80#	0.09
								[0.17]	[0.69]	0.14
		UK (n = 24/27)	12.9 (3.3)	13.7 (3.1)	13.1 (3.3)	12.4 (4.3)	13.4/11.8	2.39	0.13	0.45
	Positive affect (6–30)	Overall (n = 80/67)	20.5 (4.4)	22.0 (4.9)	21.9 (4.3)	20.6 (3.9)	22.0/19.9	14.93	0.00*	0.65
		Italy (n = 37/20)	20.6 (4.7)	22.2 (3.8)	22.7 (4.0)	20.1 (3.9)	23.1/19.4	13.24	0.001*	1.01
		Poland (n = 19/18)	18.7 (4.6)	20.2 (5.5)	19.7 (4.4)	20.5 (3.6)	20.2/20.1	0.01	0.92	0.00
		UK (n = 24/29)	21.7 (3.5)	22.9 (5.1)	22.3 (4.2)	21.0 (4.2)	22.4/20.1	5.50	0.02*	0.68
	Negative affect (11–55)	Overall (n = 79/67)	27.5 (8.0)	27.1 (8.2)	26.3 (7.6)	25.2 (8.5)	25.8/25.0	1.00	0.32	0.17
		Italy (n = 37/20)	25.8 (7.9)	28.5 (7.4)	23.7 (7.5)	27.3 (8.3)	24.7/25.4	0.40	0.53	0.18
		Poland (n = 19/18)	31.4 (7.4)	30.9 (7.1)	27.8 (6.9)	28.5 (6.8)	27.6/28.6	0.52	0.48	0.26
		UK (n = 23/29)	27.2 (8.0)	23.8 (8.4)	29.3 (7.0)	21.8 (8.7)	27.2/21.9	11.57	0.001*	0.99
	Feelings of belonging (3–15)	Overall (n = 79/63)	10.7 (2.5)	11.2 (2.4)	11.5 (2.5)	10.5 (3.1)	11.5/10.3	7.77	0.01*	0.48
		Italy (n = 37/20)	11.3 (2.3)	10.7 (2.8)	12.2 (2.2)	10.7 (2.4)	12.8/11.5	4.16	0.05*	0.57
		Poland (n = 19/18)	9.7 (2.7)	10.9 (2.1)	11.2 (2.5)	11.8 (2.2)	11.5/11.4	0.03	0.87	0.06
		UK (n = 23/25)	10.4 (2.6)	11.8 (2.1)	10.4 (2.8)	9.4 (3.8)	10.4/8.6	3.77	0.06	0.59
	Overall quality of life (1–5)	Overall (n = 81/69)	3.3 (0.8)	3.6 (1.0)	3.3 (0.8)	3.6 (1.0)	3.1/3.4	2.95	0.09#	0.29
								[2.33]	[0.13]	[0.26]
		Italy (n = 36/20)	3.5 (0.9)	3.4 (1.1)	3.5 (0.8)	2.8 (0.6)	3.4/2.6	12.74	0.001*	1.00
		Poland (n = 19/18)	3.1 (0.4)	3.8 (1.0)	3.1 (0.4)	3.6 (0.8)	3.1/3.6	5.56	0.02*#	0.82
								[5.62]	[0.02*]	0.83
		UK (n = 26/31)	3.3 (0.9)	3.6 (1.1)	3.2 (0.9)	4.2 (1.0)	3.1/3.9	14.04	0.00*	1.04
QOL-AD (range 4–52)		Overall (n = 81/67)	34.8 (5.3)	35.3 (5.1)	35.4 (5.1)	34.6 (5.6)	35.4/34.4	2.24	0.14	0.25
		Italy (n = 37/19)	34.4 (5.5)	32.6 (4.2)	35.0 (5.0)	30.5 (5.8)	35.2/31.7	6.91	0.01*	0.74
		Poland (n = 19/18)	34.3 (5.2)	37.6 (4.2)	36.3 (5.0)	38.1 (4.4)	37.5/37.1	0.12	0.74	0.13
		UK (n = 25/30)	35.8 (5.2)	35.7 (5.5)	35.3 (5.3)	35.2 (4.3)	34.8/34.6	0.04	0.85	0.06
Cornell Scale Depression (range 0–38)		Overall (n = 80/63)	8.3 (5.6)	6.3 (4.7)	7.8 (5.6)	6.8 (6.1)	6.9/7.3	0.30	0.58	0.09
		Italy (n = 35/16)	6.3 (4.2)	3.8 (2.9)	5.3 (3.5)	5.0 (5.0)	4.3/5.8	1.99	0.17	0.41
		Poland (n = 19/18)	10.2 (6.1)	7.6 (4.8)	9.4 (6.2)	9.8 (5.5)	8.5/10.5	1.71	0.20	0.45
		UK (n = 26/29)	9.5 (6.3)	6.9 (5.1)	10.2 (6.3)	5.9 (6.6)	8.8/6.4	2.93	0.09	0.48
NPI	Severity (range 0–36)	Overall (n = 91/72)	9.5 (5.6)	7.8 (5.7)	9.4 (5.6)	8.3 (6.1)	8.9/8.9	0.001	0.98	0.00
		Italy (n = 42/21)	10.8 (6.1)	9.0 (5.5)	10.5 (5.5)	10.2 (4.6)	11.8/11.8	0.01	0.95	0.00
		Poland (n = 21/19)	7.2 (3.7)	8.0 (5.5)	6.3 (4.6)	7.8 (6.1)	5.3/6.6	0.63	0.43	0.27
		UK (n = 28/32)	9.4 (5.7)	6.8 (5.9)	10.1 (5.8)	7.3 (6.8)	8.7/7.9	0.40	0.53	0.17
DUKe SSI	Satisfaction (range 1–3)	Overall (n = 80/68)	2.9 (0.4)	2.9 (0.4)	2.9 (0.3)	2.9 (0.4)	2.9/2.9	0.31	0.58	0.09
		Italy (n = 37/20)	2.8 (0.4)	2.8 (0.4)	3.0 (0.2)	2.7 (0.6)	3.0/2.8	2.65	0.11#	0.45
								[2.74]	[0.10]	[0.46]
		Poland (n = 19/18)	2.8 (0.4)	3.0 (0.0)	2.8 (0.5)	3.0 (0.0)	2.9/2.9	0.33	0.57	0.20
		UK (n = 24/30)	2.9 (0.3)	2.8 (0.5)	3.0 (0.2)	2.9 (0.4)	2.9/2.9	0.06	0.81	0.06
	Help (range 0–24)	Overall (n = 78/66)	14.7 (2.6)	13.8 (2.3)	13.8 (2.1)	13.6 (2.0)	13.5/13.6	0.03	0.87	0.00
		Italy (n = 34/20)	15.6 (2.6)	14.1 (3.1)	14.3 (1.7)	14.0 (2.1)	13.8/13.8	0.003	0.96	0.00
		Poland (n = 19/18)	15.9 (2.1)	14.9 (1.5)	14.8 (2.3)	14.9 (1.9)	14.6/15.1	0.60	0.44	0.27
		UK (n = 25/28)	12.7 (1.3)	12.9 (1.6)	12.4 (1.7)	12.4 (1.0)	12.4/12.4	0.01	0.93	0.00
	Support (range 6–18)	Overall (n = 82/68)	15.0 (2.8)	14.9 (2.7)	15.7 (2.8)	15.2 (2.6)	15.7/15.1	2.02	0.16#	0.24
								[1.68]	[0.20]	[0.21]
		Italy (n = 37/20)	15.2 (2.7)	14.8 (2.5)	16.7 (2.0)	15.2 (2.4)	17.0/15.8	3.08	0.09	0.45
		Poland (n = 19/18)	14.8 (3.3)	16.1 (2.1)	16.2 (3.4)	16.9 (1.8)	16.7/16.4	0.24	0.63	0.17
		UK (n = 26/30)	14.7 (2.7)	14.3 (3.1)	14.1 (2.7)	14.1 (2.7)	13.9/14.2	0.16	0.69	0.11

*Significant difference at 95%, $P < 0.05$.

#Levene's test showed that the group variances were not equal, so an assumption of covariance analysis was violated (transformed using square root and ANCOVA repeated).

3.5 | Country differences

Italy had the highest attrition rate (36% between pre/post-test compared with 21% in Poland and 17% in UK). The attrition in the original Dutch study was 21%. Participants in the UK MCSP and UC groups were more than twice as likely to be male (63% and 64%, respectively) than in Italy and Poland where men only accounted for around 32% of study participants. The average age was similar across all countries (around 78 years).

Meeting Centres aim to meet the needs of people with mild to moderate dementia. The severity of dementia was quantified by GDS score, with the expectation that most participants (and thus all

TABLE 3 Percentage of Meeting Centres Support Programme (MCSP) and Usual Care (UC) group participants having symptoms on the NPI at pre-test and post-test

	MCSP (n = 93)		UC (n = 74)	
NPI item	Pre-test	Post-test	Pre-test	Post-test
Apathy	68%	70%	57%	66%
Depression/dysphoria	62%	63%	50%	46%
Anxiety	63%	63%	62%	62%
Eating problems	56%	47%	26%	23%
Agitation/aggression	47%	40%	36%	51%
Irritability/liability	53%	53%	45%	45%
Delusions	37%	32%	28%	24%
Aberrant motor behaviour	38%	34%	28%	32%
Sleeping disturbances	43%	50%	40%	34%
Hallucinations	20%	28%	20%	27%
Euphoria	13%	12%	11%	11%
Disinhibition	25%	31%	27%	30%

research participants) would be GDS stage 4 to 5. The reality was quite different and varied across countries (Table 5) with a substantial proportion of participants having relatively mild cognitive problems but also some with severe dementia. The UK had the widest spread of 11% showing very mild decline and 14% in the severe stages.

On average, UK MCSP participants with dementia attended approximately half the number of days (mean = 34.7 days, SD 15.7) as their Polish counterparts (mean = 63.7 days, SD 18.7) and a third less than in Italy (mean = 48.1 days, SD 20.9) although individual variation was great in all countries. Country specific ANCOVAs (Table 2) showed a number of effects on Quality of life between the MCSP and UC groups in Italy, Poland, and the UK: Italy achieved large statistically significant effects on the DQoL sub-domains of Positive Affect (d = 1.01) and overall Quality of Life (d = 1.0), and a medium effect on Feelings of Belonging (d = 0.57). They also achieved a statistically significant medium effect on the QOL-AD (d = 0.74). In Poland, the MCSP group rated their overall Quality of life at post-test as lower than the UC group (d = 0.83) but compared with pre-test their quality of life did not change. In the UK, the MCSP group showed more Positive Affect (d = 0.68) at post-test than the UC group (medium effect), and a significant improvement on Negative Affect (d = 0.99). The UK UC group rated their overall Quality of Life as better (d = 1.04) than the MC group at post-test. The ANCOVAs did not show statistical significant effects on CSDD or NPI on a country level, but there were medium effect sizes for Italy regarding improvements in the CSDD and DSSI Satisfaction and Support.

A check on longitudinal changes in possible influencing factors (illness, physical disability, psychotropic drugs, use of other types of support) between pre and post-test within and between groups, and life events within 1 month before the post test, did not reveal differences between groups that would have explained the effects found.

4 | DISCUSSION

This research shows that it is possible to adaptively implement the Dutch MCSP model in 3 very different European countries and that the impact on people living with dementia is broadly comparable to earlier research.[4,8] As well as small to medium positive effects on Self-esteem, the current study also found medium to large effects in Positive Affect and a medium effect on Feelings of Belonging. The effect on depressed behaviour was not replicated. The original Dutch research reported significant decreases in non-social and inactive behaviour in the MCSP group. In comparison with these findings, the NPI data in the current study did not change significantly overall although there were some reductions reported for agitated and aggressive behaviour. Apathy increased in both groups but to a greater extent in the UC group. The significant correlation between higher number of attendances and a greater decrease in neuropsychiatric symptoms and greater feelings of support is of particular interest. A causal link cannot be attributed to this finding. It may be that those with increased severity of symptoms attended less, perhaps because their symptoms were disruptive or led to difficulties in them attending. Further study of this relationship may be useful in understanding the impact of attendance on neuropsychiatric symptom management.

People living with dementia are a heterogeneous group, and some of the differences found may have been due to differences in characteristics of participants in the current study and the earlier Dutch research. Our study was primarily focused on the adaptive implementation and validation of the MCSP model. As a consequence, no

TABLE 4 Attendances for research participants over 6 months from pre-test to post-test by country and overall

	N	Mean	SD	Min	Max
Italy					
Person with dementia—days attended MC	39	48.1	20.9	5	79
Carer hours of attendance	39	18.2 hours	19.8	1	74
Poland					
Person with dementia—days attended MC	20	63.7	18.7	3	83
Carer hours of attendance	20	19.4 hours	47.3	0.5	218.3
UK					
Person with dementia—days attended MC	28	34.7	15.7	11	63
Carer hours of attendance	22	65 hours	52.3	2	211.7
All countries					
Person with dementia—days attended MC	87	47.4	21.5	3	83

Carer hours of attendance	81	31.2 hours	43.2	0.5	218.3

TABLE 5 Stage of dementia for Meeting Centres Support Programme and Usual Care participants by country at pre-test

GDS Stage (Reisberg)	All Countries		Italy		Poland		UK	
	MCSP (n = 84)	UC (n = 69)	MCSP (n = 38)	UC (n = 20)	MCSP (n = 19)	UC (n = 18)	MCSP (n = 27)	UC (n = 31)
Stage 1–2: No or very mild cognitive decline	7 (8.3%)	13 (18.8%)	2 (5.3%)	-	2 (10.5%)	4 (22.2%)	3 (11.1%)	9 (29.0%)
Stage 3: Mild cognitive decline	21 (25.0%)	9 (13.0%)	13 (34.2%)	1 (5.0%)	6 (31.6%)	4 (22.2%)	2 (7.4%)	4 (12.9%)
Stage 4: Moderate cognitive decline	27 (32.1%)	33 (47.8%)	16 (42.1%)	12 (60.0%)	6 (31.6%)	7 (38.9%)	5 (18.5%)	14 (45.2%)
Stage 5: Moderately severe cognitive decline	24 (28.6%)	11 (15.9%)	6 (15.8%)	6 (30.0%)	5 (26.3%)	3 (16.7%)	13 (48.1%)	2 (6.45%)
Stage 6: Severe cognitive decline (middle dementia)	4 (4.8%)	3 (4.4%)	1 (2.6%)	1 (5.0%)	-	-	3 (11.1%)	2 (6.45%)
Stage 7: Very severe cognitive decline (late dementia)	1 (1.2%)	-	-	-	-	-	1 (3.7%)	-

detailed screening on type of dementia or cognitive impairments was performed or taken into account in the analyses, although we corrected for between group differences in severity of dementia. In the current study, MCSP participants had more severe levels of dementia generally than the sample reported by Dröes et al.[4] Also, in the Dröes et al[4] study, those in the UC group generally had a more severe dementia than those in the MCSP group, whereas the opposite was true in the current study. Within the original Dutch research, the UC group consisted of participants of Psychogeriatric Day Care units within Nursing homes. This may have impacted on fewer reports of apathy, inactivity, and depressive symptoms in the UC group in the current study than the original Dutch research.

The differences between countries in the study results also spoke to the heterogeneity of people's experience. Attendance patterns for MCs were different across countries. Likewise, the UC comparison was not the same in each country. There appeared to be an overall correlation between attendance to MCSP and neuropsychiatric symptoms and feelings of being supported. The question of whether higher levels of attendance might explain some of the differences in outcomes in the different countries is a possibility. It may also have been that positive outcomes may have been seen if the MCs had just focussed on participants with more similar levels of dementia such as the GDS 4/5. The MCs were established over a relatively short period of time, and it may have taken a greater amount of time for the model to bed into the new countries. All these issues may have diluted the effect. The study was not sufficiently powered to test this by within country analysis.

This was an exploratory study of a complex intervention in 3 countries that required significant commitment from people to participate. The attrition rate of 27% in the MC group was quite high compared with other psycho-social interventions. In the original multicentre study in the Netherlands, attrition was 20% between pre and post-test. This lower attrition might also be because the Dutch sample had less severe dementia (50% had mild dementia in the Dutch sample).

The study had a number of limitations in evaluating the impact of the intervention on people living with dementia. Allocation to the intervention was not random. In order to recruit enough participants to the intervention group, it was necessary to compare to a geographical control group where there was not a MC. Assessors were not blind to the

intervention that participants received. Baseline measurements took place up to 1 month after commencing at the MC. Only participants that completed 6 months of attendance were included in the analyses. The analysis also undertook numerous tests of significance and multiple comparisons. However, the current study was designed primarily as an implementation study where much of the time and energy was put in realising at least 2 MCs in each country who provided the full MCSP[12,13] were piloted and evaluated. Consequently, larger samples with blind assessment were not possible in this study. For a thorough effect study per country, separate larger sized RCTs would be required.

Despite these challenges, we were able to replicate a successful intervention from 1 country into 3 others and found significant benefits. This study demonstrated that cross-country and multicentre evaluations of psychosocial interventions are feasible. There may be many other interventions that could be implemented between countries to improve the post-diagnostic support for people with dementia on a more global scale. Specifically, this study suggests that the MCSP model can be successfully implemented in countries with very different health and social care systems. This should encourage other countries to implement this model with country specific adaptation. Overall, the intervention was delivered as planned, and the evaluation was carried out in a standardized way. Sufficient numbers of participants were recruited across 3 different countries to conduct a sufficiently powered overall effect analysis. There was variance both within but also between countries in patterns of attendance in the different countries, which may have diluted the effect of the impact of the intervention on a group level and as a consequence decreased some of the overall benefits.

The results of our study are in line with the literature on interventions supporting community dwelling people to live with dementia and to improve their social participation, thus aiming to improve their social health and quality of life.[30] Examples are: home community occupa-tional therapy[31,32]; the Enriched Opportunities Programme[33]; inter- generational programmes[34]; and easy access day treatment centres for people with dementia with carer support.[35] This current study is part of the emerging research into psychosocial interventions that report on positive outcomes rather than just reporting on the reduc- tion of negative symptoms.[36] It also shows the strength of combining interventions for people living with dementia and caregivers to bring about clinically relevant improvements in well-being.

5 | CONCLUSION

This study answered 2 main questions: Does the successful MCSP model developed in the Netherlands work in other European countries, more specifically in Italy, Poland, and the UK, and are comparable benefits achieved for people with dementia and their carers in these countries? The present study showed this to be the case, the implementation proved successful in all 3 countries, and the benefits were partially replicated. Further dissemination of MCSP is therefore recommended within the countries involved in the study, but also in other European countries and beyond. There is a great need for high quality implementation research to demonstrate how care interventions can be put into practice in a variety of settings and how evidence-based practices can be effectively disseminated and transferred to other countries to share knowledge and improve dementia care on a European and world wide level. Demonstrating that outcomes of effective interventions in 1 country can be replicated in other countries is therefore very important.

ETHICAL APPROVAL

The study received ethical approval in 3 countries.

UK—Health Research Authority (specifically Wales Research Ethics Committee approved Validation of the Meeting Centres Support Programme for people with dementia and their carers in UK, REC reference: 15/WA/0232: IRAS project ID: 176743.

Poland—Bioethical Committee of Wroclaw Medical University in Poland acceptance no. KB-219/2015.

Italy—Ethical committee of the IRCCS Don Gnocchi Foundation, Lombardia Region, Italy acceptance no. 6/18022015.

The number of the VU University medical center Ethics committee decision letter confirming 'MeetingDem' as being 'non-medical research' is 2013/370.

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