

Effectiveness of a virtual community of practice to improve professionals' attitude towards empowering chronic patients: a cluster-randomized controlled trial (e-MPODERA project)

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BACKGROUND

Communities of Practice (CoP) are based on the idea that learning involves a group of people who exchange experiences and knowledge. The e-MPODERA project aims to assess the effectiveness of a virtual community of practice (vCoP) at improving the attitudes of primary care health professionals on the empowerment of patients with chronic diseases.

METHOD

This is a multicenter pragmatic clinical trial, with two parallel arms comparing the intervention with usual training, with randomized allocation by clusters.

Table 1. Characteristics of health professionals

	BASELINE		
	Total	Intervention	Control
PROFESSIONALS	321	183	138
NURSES	131 (40.8%)	83 (45.4%)	48 (34.8%)
AGE mean (SD)	47.7 (8.79)	47.1 (8.78)	48.5 (8.77)
FEMALE	243 (75.7%)	141 (77.0%)	102 (73.9%)
YEARS OF EXPERIENCE mean (SD)	22.0 (8.84)	21.9 (8.52)	22.1 (9.29)
YEARS IN PRIMARY CARE mean (SD)	17.7 (8.92)	17.6 (8.67)	17.8 (9.29)
YEARS IN CENTRE mean (SD)	9.47 (6.97)	10.3 (6.99)	8.57 (6.86)
PATIENTS/DAY mean (SD)	29.4 (11.3)	27.8 (10.7)	31.4 (11.8)

Table 3. Effectiveness of the intervention (vCoP)

ITT ANALYSES				COMPLETERS ANALYSES			
PROFESSIONALS n = 321 (63 pract)	INTERVENTION n=183 (31 pract)	CONTROL n=138 (32 pract)	ADJUSTED DIFFERENCE ¹ (95% CI) p value	PROFESSIONALS n = 253 (62 pract)	INTERVENTION n=134 (31 pract)	CONTROL n=119 (31 pract)	ADJUSTED DIFFERENCE ¹ (95% CI) p value
Total PPOS				Total PPOS			
Baseline	4.37 (0.55)	4.48 (0.64)	0.15 (0.004,0.26)	Baseline	4.43 (0.55)	4.44 (0.59)	0.16 (0.04,0.27)
Follow up	4.60 (0.66)	4.49 (0.57)	p=0.009	Follow up	4.65 (0.56)	4.50 (0.54)	p=0.006
Sharing				Sharing			
Baseline	3.91 (0.74)	3.94 (1.11)	0.30 (0.16,0.45)	Baseline	3.98 (0.72)	3.95 (0.79)	0.29 (0.14,0.44)
Follow up	4.28 (0.76)	3.99 (0.80)	p<0.001	Follow up	4.32 (0.71)	4.00 (1.08)	p<0.001
Caring				Caring			
Baseline	4.83 (0.54)	4.93 (0.65)	-0.01 (-0.14,0.12)	Baseline	4.88 (0.51)	4.94 (0.59)	0.02 (-0.11,0.14)
Follow up	4.93 (0.77)	4.99 (0.53)	p=0.865	Follow up	4.99 (0.59)	4.99 (0.51)	p=0.807
PATIENTS n = 1,921 (63 pract)	INTERVENTION n=1,095 (31 pract)	CONTROL n=826 (32 pract)	ADJUSTED DIFFERENCE ² (95% CI) p value	PATIENTS n = 1,442 (62 pract)	INTERVENTION n=764 (31 pract)	CONTROL n=678 (31 pract)	ADJUSTED DIFFERENCE ² (95% CI) p value
PAM				PAM			
Baseline	65.6 (15.5)	65.3 (16.4)	0.15 (-2.40,2.71)	Baseline	65.6 (15.6)	65.2 (16.2)	1.52 (-1.58, 4.62)
Follow up	65.6 (17.2)	65.0 (16.1)	p=0.906	Follow up	65.7 (15.4)	64.8 (15.2)	p=0.336

¹ Beta, 95% CI and p-value from multilevel linear regression models with follow up scores as the dependent variable, fixed effects for professionals and random effects for center, adjusting for sex, age, profession, years of experience, tutor of medical residents, patients/day and baseline scores of the dependent variable.

² Beta 95% CI and p-value from multilevel linear regression models, with follow up scores as the dependent variable, fixed effects for patients and random effects for center and professionals, adjusting for patients' sex, age, education, marital status, living alone, duration of their main disease, and baseline scores of the dependent variable.

ITT: Intention-to-treat; PAM: Patient Activation Measure; PPOS: Patient-Practitioner Orientation Scale.

Clusters with primary care health professionals (*Family practitioners and nurses*) from 3 regions of Spain (*Canary Islands, Catalonia, and Madrid*) were randomly assigned to a vCoP or usual training (**Table 1**). Previously these professionals recruited a sample of patients with chronic diseases (*i.e., hypertension, diabetes, obesity, heart failure, asthma...*) (**Table 2**).

- The primary outcome was the patient and provider beliefs regarding patient-centeredness assessed by the Patient-Practitioner Orientation Scale (PPOS) (assessed at baseline and at 12 months).
- The secondary outcomes were the patient level of activation (PAM), sociodemographic characteristics of the professionals, the sociodemographic and clinical characteristics of the patients, and the usability of the vCoP.

Table 2. Characteristics of patients

	BASELINE		
	Total	Intervention	Control
PATIENTS (n=1,921)		1,095	826
AGE (n=1,901) mean (SD)	64.8 (12.3)	64.7 (12.3)	64.8 (12.4)
FEMALE (n=1,921)	975 (50.8%)	524 (47.9%)	451 (54.6%)
HYPERTENSION (n=1,893)	1390 (73.4%)	796 (73.0%)	594 (74.0%)
DIABETES (n=1,885)	696 (36.9%)	422 (38.8%)	274 (34.3%)
HYPERCHOLEST (n=1,886)	1103 (58.5%)	630 (58.0%)	473 (59.2%)
HEART FAILURE (n=1,883)	154 (8.2%)	88 (8.1%)	66 (8.3%)
ISCHEMIC HEART DISEASE (n=1,883)	217 (11.5%)	126 (11.6%)	91 (11.4%)
STROKE (n=1,880)	93 (4.9%)	54 (5.0%)	39 (4.9%)
COPD (n=1,880)	173 (9.2%)	111 (10.2%)	62 (7.8%)
ASTHMA (n=1,884)	162 (8.6%)	87 (8.0%)	75 (9.4%)
RENAL DISEASE (n=1,882)	165 (8.8%)	93 (8.6%)	72 (9.0%)
OBESITY (n=1,883)	652 (34.6%)	345 (31.8%)	307 (38.5%)

RESULTS

- PPOS total scores (range 1-6) and PPOS sharing score (range 1-6) were significantly higher in vCoP arm than usual training. PPOS caring scores were similar between groups (**Table 3**).
- PAM (range 0-100) was similar between groups (**Table 3**),

CONCLUSIONS

- At the professional level, the intervention might be more attractive (retention potential) to professionals that are already interested in empowerment. Regarding its effectiveness, the intervention affects only the Sharing component of PPOS, but there was not a significant effect on Caring.
- Interpretation:
 - Influence of missing cases (although ITT and completers analyses yielded very similar results)
 - Limited internal consistency of the caring subscale (alpha = 0.48).
 - Ceiling effect: the baseline scores for caring were high at baseline (4.87, on a scale of 1 to 6).
- No significant changes were observed in PAM.