S1. Questionnaire results on adherence in asthma control for trained and untrained participants

Variable	Total (n=360)	Untrained (n=180)	Trained (n=180)	p value
Importance of treatment adherence compared to the other characteristics of asthma management				
Most important, yes	334 (92.8%)	162 (90.0%)	172 (95.6%)	0.1219
Importance attached to the characteristics of asthma management (most important)				
Correct diagnosis, yes	170 (47.2%)	94 (52.2%)	76 (42.2%)	0.1280
Effective therapeutic alternatives, yes	129 (35.8%)	57 (31.7%)	72 (40.0%)	0.1320
Easy device handling, yes	130 (36.1%)	61 (33.9%)	69 (38.3%)	0.5677
Treatment adherence, yes	142 (39.4%)	75 (41.7%)	67 (37.2%)	0.6346
Adequate patient follow-up, yes	149 (41.4%)	73 (40.6%)	76 (42.2%)	0.7282
Frequency in assessing adherence				
Never	4 (1.1%)	0 (0.0%)	4 (2.2%)	0.1667
Sometimes	48 (13.3%)	23 (12.8%)	25 (13.9%)	
Frequently	163 (45.3%)	79 (43.9%)	84 (46.7%)	
Always	145 (40.3%)	78 (43.3%)	67 (37.2%)	
Type of patients assessed				
All patients	261 (72.5%)	138 (76.7%)	123 (68.3%)	0.0766
Severe patients	46 (12.8%)	20 (11.1%)	26 (14.4%)	0.3435
Non-compliance	82 (22.8%)	37 (20.6%)	45 (25.0%)	0.3147
Instruments used to assess adherence				
Ask the patient (and/or caregiver) directly, yes	315 (87.5%)	161 (89.4%)	154 (85.6%)	0.2646
Morisky Green Test, yes	46 (12.5%)	21 (11.7%)	25 (13.9%)	0.5277
TAI questionnaire, yes	41 (11.4%)	19 (10.6%)	22 (12.2%)	0.6187
MARS-A Test, yes	5 (1.4%)	3 (1.7%)	2 (1.1%)	0.6525
AEPQ Test, yes	3 (0.8%)	1 (0.6%)	2 (1.1%)	0.5621
Haynes–Sackett Test, yes	7 (1.9%)	2 (1.1%)	5 (2.8%)	0.2522
Use clinical response, for example FeNO, yes	116 (32.2%)	53 (29.4%)	63 (35.0%)	0.2594
Control of therapeutic effect, yes	230 (63.9%)	121 (67.2%)	109 (60.6%)	0.1879
I check planned prescriptions dispensed, yes	144 (40.0%)	80 (44.4%)	64 (35.6%)	0.0852
None of the above, yes	2 (0.6%)	0 (0.0%)	2 (1.1%)	0.1561
Interventions to promote adherence				
Simplify the treatment as far as possible, yes	286 (79.4%)	147 (81.7%)	139 (77.2%)	0.2968
Involve the patient in the therapeutic plan, yes	284 (78.9%)	143 (79.4%)	141 (78.3%)	0.7962
Give written information to the patient, yes	255 (70.8%)	125 (69.4%)	130 (72.2%)	0.5621
Involvement of family/patient environment, yes	184 (51.1%)	96 (53.3%)	88 (48.9%)	0.3990
Use reminder methods, yes	52 (14.4%)	28 (15.6%)	24 (13.3%)	0.5487
I call the patient if she/he did not turn up for the follow-up, yes	25 (6.9%)	13 (7.2%)	12 (6.7%)	0.8358

Variable	Total (n=360)	Untrained (n=180)	Trained (n=180)	p value
Give self-care guideline to the patient, yes	145 (40.3%)	65 (36.1%)	80 (44.4%)	0.1070
Motivational interview, yes	85 (23.6%)	33 (18.3%)	52 (28.9%)	0.0184*
A specific program for asthma education, yes	56 (15.6%)	22 (12.2%)	34 (18.9%)	0.0810
Impart health education (inhalation techniques etc.), yes	177 (49.2%)	79 (43.9%)	98 (54.4%)	0.0452*
Resources available to evaluate or promote adherence to asthma treatment				
Available Tests in medical history, yes	77 (21.4%)	38 (21.1%)	39 (21.7%)	0.8977
Education provided by nurses, yes	206 (57.2%)	109 (60.6%)	97 (53.9%)	0.2011
Placebo devices, yes	273 (75.8%)	135 (75.0%)	138 (76.7%)	0.7119
Telemedicine, yes	14 (3.9%)	2 (1.1%)	12 (6.7%)	0.0064**
Complementary explorations (FeNO, spirometry), yes	25 (69.7%)	123 (68.3%)	128 (71.1%)	0.5663
Written information (leaflets, etc.), yes	248 (68.9%)	125 (69.4%)	123 (68.3%)	0.8199
Training on adherence/adhesion (in person, online, …), yes	74 (20.6%)	25 (13.9%)	49 (27.2%)	0.0017**
Factors that influence the improvement of adherence to asthma treatment (most important)				
Patient understanding of their involvement in the disease, yes	339 (94.1%)	170 (94.4%)	169 (93.9%)	0.9696
Patient understanding of the risks and benefits of treatment, yes	328 (91.1%)	163 (90.6%)	165 (91.7%)	0.9071
Patient dexterity in the correct use of their inhaler device, yes	307 (85.3%)	155 (86.1%)	152 (84.4%)	0.5412
Simple regimen, yes	313 (86.9%)	158 (87.8%)	155 (86.1%)	0.4008
Patient reminder of clinical visits, yes	154 (42.8%)	82 (45.6%)	72 (40.0%)	0.4798
Health professional's attention, yes	298 (82.8%)	146 (81.1%)	152 (84.4%)	0.6659
Adequate access to medication, yes	274 (76.1%)	132 (73.3%)	142 (78.9%)	0.3437
Excessive treatment modifications, yes	264 (73.3%)	129 (71.7%)	135 (75.0%)	0.3529
Pharmacy Access, yes	145 (40.3%)	72 (40.0%)	73 (40.6%)	0.9931
High cost of medication, yes	193 (53.6%)	100 (55.6%)	93 (51.7%)	0.7599
Empathy between physician and patient, yes	299 (83.1%)	145 (80.6%)	154 (85.6%)	0.4258
Treatment with multiple devices, yes	251 (69.7%)	121 (67.2%)	130 (72.2%)	0.2180
Easy device use, yes	326 (90.6%)	162 (90.0%)	164 (91.1%)	0.5130
Patient preference for an inhaler, yes	283 (78.6%)	142 (78.9%)	141 (78.3%)	0.9169
Concordance in therapeutic targets between doctor and patient, yes	280 (77.8%)	128 (71.1%)	152 (84.4%)	0.0082**
Areas affected by improved adherence to treatment (greatly affected)				
Reduced need for rescue medication, yes	308 (85.6%)	152 (84.4%)	156 (86.7%)	0.8248
Reduction in daytime symptoms, yes	328 (91.1%)	166 (92.2%)	162 (90.0%)	0.3112
Reduction in nocturnal symptoms, yes	332 (92.2%)	171 (95.0%)	161 (89.4%)	0.1375
Reducing exacerbations, yes	327 (90.8%)	166 (92.2%)	161 (89.4%)	0.6545
Improving daily activities, yes	337 (93.6%)	166 (92.2%)	171 (95.0%)	0.5314

Variable	Total (n=360)	Untrained (n=180)	Trained (n=180)	p value
Improved quality of life, yes	335 (93.1%)	170 (94.4%)	165 (91.7%)	0.2914
Decreased direct and indirect costs, yes	188 (52.2%)	101 (56.1%)	87 (48.3%)	0.2762
Decreased hospitalizations, yes	296 (82.2%)	144 (80.0%)	152 (84.4%)	0.5279
Reduction in deaths, yes	264 (73.3%)	131 (72.8%)	133 (73.9%)	0.8225
Increased school performance	259 (71.9%)	130 (72.2%)	129 (71.7%)	0.5505
Improvement in sports activities, yes	299 (83.1%)	147 (81.7%)	152 (84.4%)	0.1608
Useful actions related to treatment regimens to improve adherence (very useful)				
Easy device use, yes	346 (96.1%)	175 (97.2%)	171 (95.0%)	0.5017
Reduction in the number of daily inhalations, yes	325 (90.3%)	166 (92.2%)	159 (88.3%)	0.2888
Useful actions related to resources to improve adherence (very useful)				
Have adequate tools, yes	305 (84.7%)	149 (82.8%)	156 (86.7%)	0.1509
Include measurement of adherence in the clinical history, yes	274 (76.1%)	132 (73.3%)	142 (78.9%)	0.3332
Nursing consultation, yes	295 (81.9%)	150 (83.3%)	145 (80.6%)	0.4869
More time in consultation, yes	319 (88.6%)	159 (88.3%)	160 (88.9%)	0.9296
Motivation, yes	230 (63.9%)	112 (62.2%)	118 (65.6%)	0.7666
Useful actions related to physicians to improve adherence (very useful)				
Motivational interviewing of the patient, yes	285 (79.2%)	138 (76.7%)	147 (81.7%)	0.4561
Distance learning courses, yes	146 (40.6%)	69 (38.3%)	77 (42.8%)	0.5212
Printed material, yes	214 (59.4%)	105 (58.3%)	109 (60.6%)	0.8773
Videos, images, yes	221 (61.4%)	96 (53.3%)	125 (69.4%)	0.0052**
Social media, yes	111 (30.8%)	51 (28.3%)	60 (33.3%)	0.5025
Useful actions related to patients to improve adherence (very useful)				
Seminars, yes	175 (48.6%)	81 (45.0%)	94 (52.2%)	0.2706
Printed material, yes	215 (59.7%)	106 (58.9%)	109 (60.6%)	0.7980
Videos, images, yes	223 (61.9%)	103 (57.2%)	120 (66.7%)	0.1389
Social media, yes	139 (38.6%)	62 (34.4%)	77 (42.8%)	0.2115

Chi-square test; statistically significant *p <0.05, **p<0.01, ***p<0.001

Untrained: no previous training in adherence; Trained: previous training in adherence (distance learning courses, printed material, videos, images, social media, among others)

S2: Questionnaire results on adherence in asthma control for participants trained in adherence versus participants trained in motivational interviewing

Variables	Total (n=180)	Trained in AdhE (n=90)	Trained in MI (n=90)	p value
Degree of usefulness of receiving specific training in adherence to asthma treatment				
Very useful, yes	160 (88.9%)	77 (85.6%)	83 (92.2%)	0.4065
Importance of treatment adherence compared to the other characteristics of asthma management				
Most important, yes	172 (95.6%)	87 (96.7%)	85 (94.4%)	0.5582
Importance attached to the characteristics of asthma management (most important)				
Correct diagnosis, yes	76 (42.2%)	46 (51.1%)	30 (33.3%)	0.0497*
Effective therapeutic alternatives, yes	72 (40.0%)	28 (31.1%)	44 (48.9%)	0.0474*
Easy device handling, yes	69 (38.3%)	30 (33.3%)	39 (43.3%)	0.3855
Treatment adherence, yes	67 (37.2%)	33 (36.7%)	34 (37.8%)	0.8836
Adequate patient follow-up, yes	76 (42.2%)	43 (47.8%)	33 (36.7%)	0.2966
Frequency in assessing adherence				
Never	4 (2.2%)	0 (0.0%)	4 (4.4%)	0.2506
Sometimes	25 (13.9%)	13 (14.4%)	12 (13.3%)	
Frequently	84 (46.7%)	43 (47.8%)	41 (45.6%)	
Always	67 (37.2%)	34 (37.8%)	33 (36.7%)	
Type of patients assessed				
All patients	123 (68.3%)	62 (68.9%)	61 (67.8%)	0.8727
Severe patients	26 (14.4%)	12 (13.3%)	14 (15.6%)	0.6715
Non-compliance	45 (25.0%)	24 (26.7%)	21 (23.3%)	0.6056
Instruments used to assess adherence				
Ask the patient (and/or caregiver) directly, yes	154 (85.6%)	76 (84.4%)	78 (86.7%)	0.6715
Morisky Green Test, yes	25 (13.9%)	11 (12.2%)	14 (15.6%)	0.5179
TAI questionnaire, yes	22 (12.2%)	10 (11.1%)	12 (13.3%)	0.6490
MARS-A Test, yes	2 (1.1%)	1 (1.1%)	1 (1.1%)	1.0000
AEPQ Test, yes	2 (1.1%)	2 (2.2%)	0 (0.0%)	0.1550
Haynes–Sackett Test, yes	5 (2.8%)	2 (2.2%)	3 (3.3%)	0.6501
Use clinical response, for example FeNO, yes	63 (35.0%)	30 (33.3%)	33 (36.7%)	0.6392
Control of therapeutic effect, yes	109 (60.6%)	53 (58.9%)	56 (62.2%)	0.6473
I checked/planned prescriptions dispensed, yes	64 (35.6%)	36 (40.0%)	28 (31.1%)	0.2129
None of the above, yes	2 (1.1%)	1 (1.1%)	1 (1.1%)	1.0000
Resources available to evaluate or promote adherence to asthma treatment				
Available Tests in medical history, yes	39 (21.7%)	19 (21.1%)	20 (22.2%)	0.8564
Education provided by nurses, yes	97 (53.9%)	61 (67.8%)	36 (40.0%)	0.0002**
Placebo devices, yes	138 (76.7%)	68 (75.6%)	70 (77.8%)	0.7245
Telemedicine, yes	12 (6.7%)	4 (4.4%)	8 (8.9%)	0.2320
Complementary explorations (FeNO, spirometry), yes	128 (71.1%)	59 (65.6%)	69 (76.7%)	0.1001
Written information (leaflets, etc.), yes	123 (68.3%)	64 (71.1%)	59 (65.6%)	0.4230

Variables	Total (n=180)	Trained in AdhE (n=90)	Trained in MI (n=90)	p value
Training on adherence/adhesion (in person, online, ...), yes	49 (27.2%)	24 (26.7%)	25 (27.8%)	0.8670
Interventions to promote adherence				
Simplify treatment as much as possible, yes	139 (77.2%)	62 (68.9%)	77 (85.6%)	0.0077**
Involve the patient in the therapeutic plan, yes	141 (78.3%)	64 (71.1%)	77 (85.6%)	0.0187*
Give written information to the patient, yes	130 (72.2%)	61 (67.8%)	69 (76.7%)	0.1831
Involvement of family/patient environment, yes	88 (48.9%)	43 (47.8%)	45 (50.0%)	0.7655
Use reminder methods, yes	24 (13.3%)	10 (11.1%)	14 (15.6%)	0.3805
I call the patient if they did not turn up for follow-up, yes	12 (6.7%)	6 (6.7%)	6 (6.7%)	1.0000
Give self-care guideline to the patient, yes	80 (44.4%)	33 (36.7%)	47 (52.2%)	0.0357*
Motivational interview, yes	52 (28.9%)	14 (15.6%)	38 (42.2%)	<.0001***
A specific program for asthma education, yes	34 (18.9%)	14 (15.6%)	20 (22.2%)	0.2532
Impart health education (inhalation techniques etc.), yes	98 (54.4%)	45 (50.0%)	53 (58.9%)	0.2312
Factors that influence the improvement of adherence to asthma treatment (most important)				
Patient understanding of their involvement in the disease, yes	169 (93.9%)	81 (90.0%)	88 (97.8%)	0.0569
Patient understanding of the risks and benefits of treatment, yes	165 (91.7%)	80 (88.9%)	85 (94.4%)	0.1751
Patient dexterity in the correct use of their inhaler device, yes+++	152 (84.4%)	75 (83.3%)	77 (85.6%)	0.9139
Simple regimen, yes	155 (86.1%)	77 (85.6%)	78 (86.7%)	0.9733
Patient reminder of clinical visits, yes	72 (40.0%)	38 (42.2%)	34 (37.8%)	0.8310
Health professional's attention, yes	152 (84.4%)	76 (84.4%)	76 (84.4%)	0.8854
Adequate access to medication, yes	142 (78.9%)	71 (78.9%)	71 (78.9%)	1.0000
Excessive treatment modifications, yes	135 (75.0%)	67 (74.4%)	68 (75.6%)	0.5489
Pharmacy Access, yes	73 (40.6%)	34 (37.8%)	39 (43.3%)	0.2180
High cost of medication, yes	93 (51.7%)	45 (50.0%)	48 (53.3%)	0.4543
Empathy between physician and patient, yes	154 (85.6%)	70 (77.8%)	84 (93.3%)	0.0036**
Treatment with multiple devices, yes	130 (72.2%)	63 (70.0%)	67 (74.4%)	0.7921
Easy device use, yes	164 (91.1%)	82 (91.1%)	82 (91.1%)	1.0000
Patient preference for an inhaler, yes	141 (78.3%)	65 (72.2%)	76 (84.4%)	0.1156
Concordance in therapeutic targets between and patient, yes	152 (84.4%)	65 (72.2%)	87 (96.7%)	<.0001***

Variables	Total (n=180)	Trained in AdhE (n=90)	Trained in MI (n=90)	p value
Areas affected by improved adherence to treatment (greatly affected)				
Reduced need for rescue medication, yes	156 (86.7%)	82 (91.1%)	74 (82.2%)	0.1322
Reduction in daytime symptoms, yes	162 (90.0%)	82 (91.1%)	80 (88.9%)	0.4598
Reduction in nocturnal symptoms, yes	161 (89.4%)	79 (87.8%)	82 (91.1%)	0.7264
Reducing exacerbations, yes	161 (89.4%)	79 (87.8%)	82 (91.1%)	0.7264
Improving daily activities, yes	171 (95.0%)	86 (95.6%)	85 (94.4%)	0.6048
Improved quality of life, yes	165 (91.7%)	86 (95.6%)	79 (87.8%)	0.1212
Decreased direct and indirect costs, yes	87 (48.3%)	51 (56.7%)	36 (40.0%)	0.0232*
Decreased hospitalisations, yes	152 (84.4%)	77 (85.6%)	75 (83.3%)	0.5067
Reduction in deaths, yes	133 (73.9%)	75 (83.3%)	58 (64.4%)	0.0062**
Increased school performance, yes	129 (71.7%)	63 (70.0%)	66 (73.3%)	0.8592
Improvement in sports activities, yes	152 (84.4%)	76 (84.4%)	76 (84.4%)	0.5954
Useful actions related to treatment regimens to improve adherence (very useful)				
Easy device use, yes	171 (95.0%)	87 (96.7%)	84 (93.3%)	0.4601
Reduction in the number of daily inhalations, yes	159 (88.3%)	80 (88.9%)	79 (87.8%)	0.4640
Useful actions related to resources to improve adherence (very useful)				
Have adequate tools, yes	156 (86.7%)	79 (87.8%)	77 (85.6%)	0.3632
Include adherence measurement in the clinical history, yes	142 (78.9%)	71 (78.9%)	71 (78.9%)	1.0000
Nursing consultation, yes	145 (80.6%)	73 (81.1%)	72 (80.0%)	0.9017
More time in consultation, yes	160 (88.9%)	79 (87.8%)	81 (90.0%)	0.8117
Motivation, yes	118 (65.6%)	59 (65.6%)	59 (65.6%)	0.9603
Useful actions related to physicians to improve adherence (very useful)				
Motivational interviewing of the patient, yes	147 (81.7%)	60 (66.7%)	87 (96.7%)	<.0001***
Distance learning courses, yes	77 (42.8%)	36 (40.0%)	41 (45.6%)	0.6475
Printed material, yes	109 (60.6%)	54 (60.0%)	55 (61.1%)	0.6481
Videos, images, yes	125 (69.4%)	55 (61.1%)	70 (77.8%)	0.0068**
Social media, yes	60 (33.3%)	26 (28.9%)	34 (37.8%)	0.4404
Useful actions related to patients to improve adherence (very useful)				
Seminars, yes	94 (52.2%)	49 (54.4%)	45 (50.0%)	0.4015
Printed material, yes	109 (60.6%)	57 (63.3%)	52 (57.8%)	0.5663
Videos, images, yes	120 (66.7%)	58 (64.4%)	62 (68.9%)	0.2476
Social media, yes	77 (42.8%)	28 (31.1%)	49 (54.4%)	0.0060**

C: Chi-square test; statistically significant *p <0.05, **p<0.01, ***p<0.001

Trained in AdhE: previous training in adherence (distance learning courses, printed material, videos, images, social media, among others)

Training in MI: Training in motivational interview: 2.30-hour-long training sessions for medical professionals including: asthma adherence evidenced based video support. The training MI was conducted by a psychiatrist specialised in the type of technique.