Online supplementary material

Randomised controlled trials and cluster randomised controlled trials

Author, year and country	Objective	Study characteristics	Pharmacist intervention characterisation	Clinical asthma outcome	Method of assessment	Results
Armour *et al* [14] 2007 Australia	To implement the Pharmacy Asthma Care Program and evaluate its effect on asthma control and other clinical and humanistic patient outcomes.	**Design:** Cluster randomized controlled trial **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control) **Follow-up time:** 6 months **Nº measures:** 3 mandatory (baseline, 1 month, 6 months) + 1 optional (3 months) **Nº patients:** 351 **Nº practices:** 50	**Educational components:** - Provision of information on: o Asthma condition o Asthma medications o Lifestyle issues (Eg. Asthma triggers) - Inhaler technique training - Medication adherence management - Goal setting **Other actions undertaken by the pharmacist:** - Detection and resolution of drug-related problems - GP referral	Asthma severity (Proportion of patients classified as having severe asthma)	Tool adapted from the National Asthma Council Australia asthma severity assessment table	**Intergroup results:** - The proportion of intervention patients who were classified as having severe asthma declined significantly from 87.9% to 52.7% (p<0.001) during the study, while that of the control group remained unchanged (71.2% to 67.9%; p = 0.11) - Patients in the intervention group were almost three times more likely to change from the ''severe'' category to the ''not severe'' category (''moderate'' or ''mild'') than patients in the control group (odds ratio (OR) 2.68, 95% CI 1.64 to 4.37; p<0.001). Similar results were obtained using an intention-to-treat approach (adjusted OR 2.42, 95% CI 1.51 to 3.88; p<0.001)
				FEV1 (% of predicted FEV1)	Spirometry (In the pharmacy)	**Intergroup results:** - Mean difference in FEV1 values between study groups after the intervention =-1.81 [(95% IC 24.21 to 0.59); p=0.14]
				FEV1/FVC (% of predicted FEV1/FVC)	Spirometry (In the pharmacy)	**Intergroup results:** - Mean difference in FEV1/FVC values between study groups after the intervention = 0.41 [(95% IC 21.76 to 2.57); p=0.71]
Barbanel *et al* [16] 2003 United Kingdom	To test whether a community pharmacist with basic asthma training could improve asthma control with a simple program of self-management advice.	**Design:** Randomized controlled trial **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control) **Unit of randomization:** Patient **Follow-up time:** 3 months **Nº measures:** 2 (Baseline and 3 months) **Nº Patients:** 24 (12 intervention, 12 control) **Nº Practices:** Not specified	**Educational components:** - Provision of information on: o Basic pathophysiology of asthma o Recognition and avoidance of asthma triggers o Action in response to worsening symptoms o How to access emergency care appropriately - Inhaler technique training - Asthma self-management (Peak-flow or symptoms monitoring) - Smoking cessation counselling	Asthma symptoms (Mean symptoms score)	North of England asthma symptoms scale	**Intergroup results:** - Mean difference in asthma symptoms scores between study groups after the intervention =7.0 [(95% CI 4.4 to 9.5); p<0.001]

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Bereznicki et al [17] 2008 Australia	To assess the impact of an intervention initiated by community pharmacists, involving the provision of educational material and GP referral, on asthma knowledge and self-reported asthma control and asthma-related QOL in patients who may have suboptimal management and control of their asthma.	**Design:** Randomized intervention study with control group **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control) **Follow-up time:** 6 months **Nº measures:** 2 for intervention patients (baseline and 6 months) 1 for control patients (6 months) **Nº patients:** 95 intervention at baseline 116 intervention at six months 57 control **Nº practices:** 35	**Actions undertaken by the pharmacist:** - GP referral	Asthma Control (Asthma control score)	Questionnaire based on the Asthma Control Test	**Intergroup results** - Difference in asthma control scores between study groups after the intervention= 2.6 ($p<0.01$)
Garcia-Cardenas *et al* [19] 2013 Spain	To evaluate whether a pharmacist intervention focused on asthma control, medication adherence and inhaler technique would result in an improved asthma control in adult asthma patients.	**Design:** Cluster randomized controlled trial **Nº study groups:** 2 (intervention and control) **Setting:** Community pharmacy **Follow-up:** 6 months **Nº measures: 3** (Baseline, 3 months and 6 months) **Nº Patients:** 336 (186 intervention, 150 control) **Nº Practices:** 51 (29 intervention and 22 control)	**Educational components:** - Provision of information on: o Asthma condition o Asthma medications o Asthma triggers - Inhaler technique training - Medication adherence management	Asthma Control (ACQ scores and Proportion of controlled patients)	Asthma Control Questionnaire (ACQ-5 item version)	**Intergroup results:** - Difference in ACQ scores between study groups after the intervention = 0.41 points ($p<0.001$) - Difference in % of controlled patients between study groups after the intervention =12.1% $p=0.028$ - Intervention patients had an Odds Ratio of 3.06 (95% CI: 1.63-5.73; $p<0.001$) for being controlled. Similar results were obtained using an intention-to-treat approach (adjusted OR=1.94 [(95% CI: 1.06-3.55; $p<0.032$)]

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Mehuys *et al* [22] 2008 Belgium	To study the hypothesis that a pharmacist intervention, focused on the optimal use of asthma medication and tailored to the patient's current asthma control, would result in an improved asthma control in adult patients over a 6-month period	**Design:** Randomized, controlled, parallel group trial **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control group) **Follow-up time:** 6 months **Nº measures:** 4 (baseline, 1 month, 3 months and 6 months) **Nº patients:** 150 **Nº practices:** 66	**Educational components:** - Provision of information on: o Asthma condition o Asthma symptoms o Asthma triggers o Early warnings of asthma o Asthma medications - Inhaler technique training - Medication adherence management - Smoking cessation counseling **Other actions undertaken by the pharmacist:** - GP or specialist referral	Asthma control (Mean ACT score)	Asthma Control Test (ACT)	**Intergroup results:** - Difference in mean change of ACT scores between study groups after the intervention= 0.1 [(95% CI: -0.8-0.8); p=0.492] - Difference in percentage of controlled patients between study groups after the intervention =7.7% (no p-value provided)
				Symptoms (Number of nocturnal awakenings due to asthma)	Self-completed diary	**Intergroup results:** - Difference in mean change of nocturnal awakenings between study groups after the intervention =-3.5 [(95% IC: -7.0– -0.1); p=0.044]
				PEF (% of maximum PEF)	Peak-flow meter (Self-completed diary)	**Intergroup results:** - Difference in mean change of for PEF morning between study groups after the intervention =-0.5 [(95% CI: -3.1–2.1); p=0.703] - Difference in mean change of for PEF evening between study groups after the intervention =-1.0 [(95% CI: -3.6–1.5); p=0.430]
Anjan Kumar *et al* [28] 2009 India	To assess the influence of community pharmacist provided health education on treatment outcomes in asthma patients.	**Design:** Randomized controlled trial **Setting:** Ambulatory hospital (Out patient department of pulmonology) **Nº study groups:** 2 (intervention and control group) **Follow-up time:** 2 months **N measures:** 5 (baseline, 15 days, 1 month, 1 month and 15 days, 2 months) **Nº patients:** 98 **Nº practices:** 1	**Educational components:** - Provision of information on: o Asthma condition o Asthma medications o Lifestyle modifications - Inhaler technique training	FEV1 (L) (Absolute number)	Spirometer	**Intergroup results:** - Significant improvements in FEV1 values were observed in intervention group (from 2.15 to 2.47) compared to the control group (from 2.16 to 2.27), (no p-value provided)
Abdelhamid *et al[29]* 2008 Sudan	To implement and assess hospital-based pharmaceutical care services for patients with asthma in Sudan	**Design:** Prospective, randomized, controlled and single-centre trial **Setting:** Hospital (Outpatients attending emergency department or referral clinic) **Nº study groups:** 2 (intervention and control) **Follow-up time:** 22 weeks **Nº measures:** 12 (baseline and every two weeks up to 22 weeks) **Nº patients:** 78 (48 intervention and 30 control) **Nº practices:** 1	**Educational components:** - Provision of information on: o Asthma condition o Non-drug therapy measures o Asthma pharmacotherapy - Inhaler technique training - Asthma self-management (method not specified)	Symptoms (Mean frequency of nocturnal asthma symptoms)	Patient self-reported (card)	**Intergroup results** - The intervention group had a greater significant decrease in the mean frequency of nocturnal symptoms than the control group during the 20th and 22nd weeks of the follow-up ($p<0.05$) (no mean values provided)
				PEF (L/min) (PEF rate)	Peak flow meter in the pharmacy	**Intergroup results** - The change in the peak expiratory flow rate between both groups was not statistically significant ($p>0.05$) (no mean values provided)

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Young *et al* [34] 2012 USA	To conduct a pilot test of the patient and pharmacist telephonic encounters intervention to improve underserved rural asthma patients' asthma control. The primary aim was to assess the feasibility and acceptability of implementing this intervention. Secondary aims included the exploration of the intervention's impact on asthma control, patient activation, and the use of long-term controller medications.	**Design:** Randomized controlled trial **Setting:** Telephone **Nº study groups:** 2 (intervention and control) **Follow-up time:** 6 months **Nº measures:** 2 (baseline and 6 months) **Nº patients:** 83 **Nº practices:** No practices, intervention delivered by telephone	**Educational components:** - Provision of information on: o Asthma medications use - Inhaler technique training - Asthma self-management (Method not specified) **Other actions undertaken by the pharmacist:** - Referral (e.g., primary care provider, specialty provider, or urgent care/ emergency room services provider)	Asthma Control (ACT score)	Asthma Control Test (ACT)	**Intergroup results:** - Difference in mean change of ACT scores between study groups after the intervention= -0.57 [(95% CI: -2.3 to 1.08); not statistically significant] (no p-value provided)
Lim AS *et al [33]* 2014 Australia	To evaluate an intervention that incorporated regular patient-self monitoring and multidisciplinary health approach to asthma management. It was hypothesized that participants receiving the intervention would have better asthma control than those receiving usual care.	**Design:** Randomised controlled trial **Setting:** Antenatal outpatient clinic in maternity hospital **N study groups:** 2 **Follow-up time:** 6 months **Nº measures:** 3 (baseline, 3 months, 6 months) **Nº patients:** 58 **Nº practices:** 2	**Educational components:** - Provision of information on: o Asthma triggers - Inhaler technique training - Asthma self-monitoring (Lung function monitoring through electronic spirometer) - Smoking cessation counselling **Other actions undertaken by the pharmacist:** - GP referral - Asthma action plan recommendation - Medication review	Asthma Control (ACQ score)	Asthma Control Questionnaire (ACQ-7 item version)	**Intergroup results:** - The difference in ACQ scores between groups was: o At 3 months: -0.22 (95% CI: -0.54 to 0.10); p=0.2] o At 6 months: -0.60 [(95% CI: -0.85 to -0.36); p<0.001]
OR: Odds Ratio; CI: Confidence Interval; FEV1: Forced Expiratory Volume in the first second; FVC: Forced Vital Capacity; VC: Vital Capacity; ACQ Asthma Control Questionnaire; ACT: Asthma Control Test; PEF: Peak Expiratory Flow; VC: Vital Capacity; L: Litres; min: Minutes						

Non randomised controlled trials or cluster randomised controlled trials						
Author, year and country	**Objective**	**Study characteristics**	**Pharmacist intervention characterisation**	**Clinical asthma outcome**	**Method of assessment**	**Results**
Saini *et al* [23] 2004 Australia	To measure the impact of a specialized asthma service provided through community pharmacies in terms of objective patient clinical, humanistic, and economic outcomes.	**Design:** A parallel, controlled, repeated-measures study **Nº Groups:** 3 (1 intervention, 2 control) **Unit of randomization:** Community pharmacies **Setting:** Community pharmacy **Follow-up:** 6 months **Nº measures: 4** (Baseline, 1 month, 3 months and 6 months) **Nº Patients:** 89 (39 intervention, 20 in the first control group and 28 in the second control group) **Nº Practices:** 19 (12 intervention and 7 control)	**Educational components:** - Provision of information on: o Asthma triggers - Inhaler technique training - Medication adherence management - Asthma self-management (Peak flow monitoring) - Goal setting **Other actions undertaken by the pharmacist:** - Referral to other health care professionals - Provision of written asthma action plan	Asthma severity (Asthma severity score)	Score obtained from patient report on frequency symptoms	**Intergroup results:** - The intervention group had significant lower asthma severity scores at the end of the study (2.6±0.5) compared to the first control group (2.7±0.7) and the second one (2.4±0.5) (p<0.001)
				PEF (PEF Index)	Peak-flow meter (Patient peak flow diary record)	**Intragroup results (only available for the intervention group):** - Change in PEF values after the intervention from 82.7%±8.2% to 87.4%±8.9% (p<0.001)
De Tullio PL *et al* [32] 1987 USA	(1) To determine the effect of pharmacists' consultation on patients' compliance by measuring response to bronchodilators as determined by FEV1 and FVC (2) To determine the effect of pharmacists' consultation on patients' compliance by assessing performance of the 11- step inhaler sequence (3) To compare these two measures of compliance and identify specific steps in the inhaler sequence associated with increased PFTs	**Design:** Quasi-experimental design with control group **Nº Groups:** 2 (1 intervention, 1 control) **Unit of randomization:** Medicine clinics (General medicine or medicine-chest clinics at a Veterans Administration medical centre) **Setting:** Outpatient (General medicine or medicine-chest clinics at a Veterans Administration medical centre) **Nº study groups:** 2 (intervention and control) **Follow-up time:** Not specified (from baseline to patient's next visit to the clinic) **Nº measures:** 2 (baseline and final) **Nº patients:** 19 (10 intervention and 9 control) **Nº practices:** 1	**Educational components:** - Provision of information on: o Importance of inhalers for asthma management - Inhaler technique training	FEV1 (L) (Mean percentage change)	McKesson—Vitalor Spirometer	**Intergroup results:** - The mean percentage change in FEV1 values for the counselled group (18.5 ± 1.5) was significantly greater than the mean percentage increase for the non-counselled group (5.2 ± 1.0) (no p-value provided)
				FVC (L) (Mean percentage change)	McKesson—Vitalor Spirometer	**Intergroup results:** - There was not a significant difference in the percentage change in FVC between the two groups (no FVC or p-values).

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Schulz *et al* [24] 2001 Germany	To investigate the impact of pharmaceutical care for asthma patients in Germany.	**Design:** Cluster controlled trial (non-randomised) **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control) **Follow-up time:** 12 months **Nº measures:** 3 (baseline, 6 months and 12 months) **Nº patients:** 164 **Nº practices:** (not reported)	**Educational components:** - Inhaler technique training - Asthma self-management (Peak flow monitoring) **Other actions undertaken by the pharmacist:** - Detection and resolution of drug-related problems	Asthma severity (Rated by physician)	Rated by physician according to the German Asthma Guidelines	**Intergroup results:** - No significant improvements were observed (final score of 1.48 in the intervention group versus 1.66 in the control group, p=0.219)
				Dyspnoea (Rated by physician)	Rated by physician according to the German Asthma Guidelines	**Intergroup results:** - No significant improvements were observed (final score of 1.04 in the intervention group versus 1.35 in the control group, p=0.397)
				PEF (L/min) (PEF rate)	Peak-flow meter (In the pharmacy) Peak-flow meter (Patient's self-completed diary)	**Intergroup results:** - PEF monitored in the pharmacy No significant improvements were observed (final score of 377 in the intervention group versus 388 in the control group, p=0.515) - Self-monitored PEF: No significant improvements in morning values were observed Evening values significantly improved (from 350 to 364, p=0.029)
				FEV1 (L) (% Change FEV1 from baseline)	Not specified	**Intergroup results:** - No significant difference of FEV1 values in comparison to the control group could be established at 12 months. - Increase of 6.4% in the intervention group versus increase of 6.7% in the control group (p=0.475)
Smith *et al* [25] 2007 Australia	To evaluate the intervention designed in terms of its process (e.g. goal setting), clinical (e.g. asthma control) and psychosocial (e.g. asthma self-efficacy) outcomes.	**Design:** Controlled parallel group study **Setting:** Community pharmacy **Nº study groups:** 2 (intervention and control) **Follow-up time:** 9 months **Nº measures:** 6 for intervention group and 3 for control group **Nº patients:** 91 **Nº practices:** not specified	**Actions undertaken by the pharmacist:** - Goal setting and strategy development in those areas of asthma control of most personal concern to each patient	Asthma Control (ACQ Score)	Asthma Control Questionnaire (ACQ – 6 item version)	**Intergroup results:** - At the end of the study, patients in the intervention group had lower mean ACQ scores (0.98±0.86) than patients in the control group (1.41±1.17), but was not statistically significant **Intragroup results:** - Patients in the intervention group significantly decreased their mean ACQ scores from baseline (1.21±) to the end of the study (0.98) (p=0.02)

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Petkova *et al[18]* 2005 Bulgaria	To evaluate the impact of a pharmaceutical care program on patients with asthma.	**Design:** Quasi-experimental study without control group **Setting:** Community pharmacy **Nº study groups:** 1 (intervention) **Follow-up time:** 5 months **Nº measures:** 4 (baseline, 1 month, 3 months **Nº patients:** 45 **Nº practices:** 9	**Educational components:** - Provision of information on: o Asthma condition o The effect of obesity on physical condition and the advantages of weight reduction o Meal selection o Nicotinism (tobaccoism) o Asthma complications o Possible adverse drug reactions of asthma medications - Inhaler technique training - Asthma self-monitoring (Peak flow monitoring)	Sleep disturbances (Number of patients with sleep disturbances)	Not specified	**Intragroup results:** - The number of patients with sleep disturbances decreased from 58 at baseline to 2 after the intervention (no p-value provided)
				PEF (L/min) (PEF rate)	Portable hand held spirometer (In the pharmacy)	**Intragroup results:** - The change in mean PEF rates after the intervention was: o For males: 0.68±0.077 to 0.81±0.084 o For females: 0.69±0.076 to 0.81±0.075 (No p-value provided)
Armour *et al* [15] 2013 Australia	(1) To investigate the feasibility and effectiveness of a specialist management service in community pharmacy for patients identified as at risk of adverse outcomes. (2) To assess whether similar clinical and humanistic outcomes could be achieved by three versus four consultations over 6 months. (3) To assess the sustainability of outcomes after 12 months.	**Design:** Cluster randomized design **Setting:** Community pharmacy **N study groups:** 2 (3-visits intervention group and 4-visits intervention group) **Follow-up time:** 6 months **Nº measures:** 3 for the 3-visits group (baseline, 1 month and 6 months) 4 for the four-visits group (baseline, 1 month, 3 months and 6 months) **Nº patients:** 570 **Nº practices:** 96	**Educational components:** - Provision of information on: o The condition o Asthma triggers - Medication use management - Medication adherence management - Knowledge of disease assessment - Health beliefs assessment - Use of an asthma action plan **Other actions undertaken by the pharmacist:** - GP referral	Asthma Control (ACQ score and % of patients having good/fair control)	Asthma Control Questionnaire (ACQ) Symptom and activity tool	**Intragroup results:** - The change in mean ACQ scores in both study groups after the intervention was: o Group 1 (3 visits): mean reduction =0.57 o Group 2 (4 visits): mean reduction =0.56 o Overall, 48% patients demonstrated a clinically important reduction of ≥0.5 in their ACQ score (No p-value provided for intragroup comparisons) - The change in the percentage of controlled patients was: o Group 1 (3 visits): The proportion with good/fair control increased from 29% to 61% o Group 2 (4 visits): The proportion with good/fair control increased from 21% to 59% (No p-value provided for intragroup comparisons)
Toumas-Sehata M *et al* [26] 2014 Australia	To compare the effectiveness of the current best practice, qualitative feedback, with a combination of qualitative and quantitative visual feedback on inhaler technique maintenance over time.	**Design:** Cluster randomized design **Setting:** Community pharmacy **N study groups:** 2 (qualitative visual feedback intervention group and qualitative and quantitative visual feedback intervention group) **Follow-up time:** 1 month **Nº measures:** 2 (baseline and 1 month) **Nº patients:** 97 **Nº practices:** 19	**Educational components:** - Inhaler technique training	Asthma Control (ACQ score)	Asthma Control Questionnaire (ACQ – 7 item version)	**Intragroup results:** - The change in mean ACQ scores in both study groups after the intervention was: o Group 1 (qualitative visual feedback): mean reduction = 0.2 (p=0.004) o Group 2 (qualitative and quantitative visual feedback): mean reduction = 0.4 (p=0.003)

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Zanghelini F *et al* [27] 2011 Brazil	To assess the impact of medication review with follow-up on pulmonary function on those patients suffering from severe asthma	**Design:** Quasi-experimental study with no control group **Setting:** Community pharmacy **N study groups:** 1 **Follow-up time: 6 months** **Nº measures:** 2 (baseline and 6 months) **Nº patients:** 26 **Nº practices:** 1	**Actions undertaken by the pharmacist:** - Comprehensive medication review with follow-up	Asthma Control (Number of controlled patients)	Asthma Control Test (ACT)	**Intragroup results:** - At the beginning of the study, 100% of patients had their asthma uncontrolled. This percentage was reduced to 7.69% after the follow-up (no p-value provided).
				FEV1 (%)	Spirometry	**Intragroup results:** - Significant improvements in mean %FEV1 were found from baseline (46.6%±0.09) to the end of the study (70.4%±0.10) (p<0.05)
Giraud *et al* [20] 2011 France	To analyse, for patients with asthma receiving maintenance therapy with Inhaled Corticosteroids administered through standard pressurised Metered Dose Inhaler (pMDIs) or breath-actuated Metered Dose Inhalers (BAIs): (1) The feasibility and acceptability of education on inhaler technique in community pharmacies (2) Whether there is a link between inhaler technique, asthma control, and self-reported adherence.	**Design:** Quasi-experimental study with no control group **Setting:** Community pharmacy **Nº study groups:** 1 (intervention) **Follow-up time:** 1 month **Nº measures:** 2 (baseline and 1 month) **Nº patients:** 503 **Nº practices:** 123	**Educational components:** - Inhaler technique training	Asthma Control (ACQ score)	Asthma Control Questionnaire (ACQ-6-item version with no lung function)	**Intragroup results:** - Mean ACQ scores decreased from 1.8 (1.2) to 1.4 (1.1) (p < 0.001)
Odegard *et al* [31] 2004 USA	To improve asthma treatment outcome in English as a Second Language (ESL) Asians through provision of asthma supplies and language-appropriate education.	**Design:** Pre–post intervention study with patients acting as their own controls **Setting:** Community clinic **Nº study groups:** 1 **Follow-up time:** 6 months **Nº measures:** 2 (pre-intervention and post-intervention) **Nº patients:** 32 **Nº practices:** 1	**Educational components:** - Provision of information on: o Asthma physiopathology o Asthma triggers o Asthma treatments - Inhaler technique training - Asthma self-monitoring (Peak flow monitoring)	Symptoms (Mean nocturnal episodes of asthma)	Not reported	**Intragroup results:** - Mean (range) nocturnal episodes of asthma weekly decreased from 1.4 (0-7) (pre-intervention) to 0.3 (0-2) after the intervention, p<0.001

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Narhi *et al* [30] 2000 Findland	To investigate whether enhanced counselling by community pharmacists according to the principles of the TOM improves clinical outcomes of asthma patients.	**Design:** Pre-post quasi-experimental study **Setting:** Community clinic **Nº study groups:** 1 (intervention) **Follow-up time:** 1 year + an additional year to measure outcomes **Nº measures:** 5 (baseline, 4, 8, 12 and 24 months) **Nº patients:** 28 **Nº practices:** 4	**Educational components:** - Provision of information on: o Asthma pathology o Use of asthma medications o Recognising and managing asthma symptoms - Inhaler technique training - Asthma self-monitoring (Peak flow monitoring)	Symptoms (Mean number of symptoms)	Ad hoc questionnaire	**Intragroup results:** - Decrease in all symptoms (no p-value provided), more significant in: - Day time wheeze (From 5 patients with no symptoms to 16) - Allergic symptoms (From 10 with no symptoms to 17) and mucus excretion (from 9 patients with no symptoms to 14)
				PEF (Number of patients having PEF values under 75% and 80% of optimal PEF)	Peak flow meter (In the pharmacy)	**Intragroup results:** - Number of patients with PEF values below 85% of optimal PEF= 4 (out of 28) - Number of patients with PEF values below70% of optimal PEF= 0 (No p-value provided)
Mangiapane *et al* [21] 2005 Germany	To evaluate the contributions of community pharmacies in disease management program and/or integrated care contracts with regard to outcomes.	**Design:** Quasi-experimental study without control group **Nº Groups:** 1 (intervention) Unit of randomization: Not applicable **Setting:** Community pharmacy Follow-up: 12 months **Nº measures:** 3 (Baseline, 6 months and 12 months) **Nº Patients:** 128 **Nº Practices:** 39	**Educational components:** - Provision of information on: o Asthma pathology o Use of asthma medications - Inhaler technique training - Asthma self-monitoring (Peak-flow monitoring) **Other actions undertaken by the pharmacist:** - Detection and resolution of drug-related problems	Asthma severity (Asthma severity score)	German Asthma Guidelines (Scored from 1 to 4)	**Intragroup results:** - Change in asthma severity scores after the intervention from 2.0±0.9 to 1.7±0.8 (p<0.002)
				Asthma symptoms	Patient reported (Scored from 0 to 3)	**Intragroup results:** - Change in asthma symptoms after the intervention from 3.1±2.3 to 2.5±2.3 (p<0.001)
				PEF (L/min) (PEF rate)	Peak-flow meter (In the pharmacy)	**Intragroup results:** - Change in PEF rates after the intervention from 402.9±114.9 to 433.4±110.3 (p<0.001)
				FEV1 (Absolute number)	Spirometry (In the patient's physician practice)	**Intragroup results:** - Change in FEV1 values after the intervention from 2.8±1.0 to 2.9±1.0 (p=0.48)
				VC (Absolute number)	Spirometry (In the patient's physician practice)	**Intragroup results:** - No change in VC values after the intervention, stable at 3.8±1.3 (p=0.26)
				FEV1%VC (Percentage)	Spirometry (In the patient's physician practice)	**Intragroup results:** - Change in FEV1%VC values after the intervention from 75.7±15.9 to 76.2±14.8 (p=0.49)
				Dyspnea severity (Dyspnoea severity score)	Medical Research Council Dyspnea Scale (Scored from 0 to 4)	**Intragroup results:** - Change in dyspnoea severity score after the intervention from 2.2±0.8 to 2.0±0.9 (p<0.05)

Intragroup results provided only in absence of intergroup results

OR: Odds Ratio; CI: Confidence Interval; FEV1: Forced Expiratory Volume in the first second; FVC: Forced Vital Capacity; VC: Vital Capacity; ACQ Asthma Control Questionnaire; ACT: Asthma Control Test; PEF: Peak Expiratory Flow; VC: Vital Capacity; L: Litres; min: Minutes