

RESEARCH REVIEW

NZ INSPIRE – Study Overview

Research Review undertook a survey of 160 patients with asthma in New Zealand. The survey was based on the INSPIRE study that has been undertaken in several other countries, but a shorter questionnaire was administered. This report gives an overview of the study design, an overview of the results and presents the results in detail.

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(i) Overview of study design

The survey examined the attitudes and actions of 160 GP-recruited adults aged ≥ 16 years with asthma in New Zealand who were prescribed regular maintenance therapy with inhaled corticosteroids or inhaled corticosteroids plus long-acting β_2 -agonists. A structured interview was administered to assess medication use, asthma control, and patients' ability to recognise and self-manage worsening asthma.

The study design was based on recruitment of patients by GPs. 10 GPs were recruited by invitation with the aim being to achieve a wide geographical coverage of the country. Non-performing GPs (who did not recruit) had their allocation of patients transferred to the performing GPs.

GPs were asked to identify patients with asthma who were aged ≥ 16 years, had a doctor diagnosis of asthma and were attending the surgery either for a consultation or to collect a prescription for asthma medication. To minimise selection bias, physicians were requested to ask consecutive patients with asthma if they would participate in a telephone interview, until their quota of 16 patients agreeing to take part was achieved. All patients had to have received a prescription for maintenance therapy with ICS, with or without LABA (including ICS/LABA combination therapy). Patients with chronic obstructive pulmonary disease were excluded but smokers were not.

The GPs forwarded to the researchers details of willing patient's prescribed asthma medication and the patient contact details.

Telephone interviews (duration around 15 min) were undertaken using a structured questionnaire by Research Review staff. Respondents were asked about their use of asthma therapy; need for medical intervention for asthma (defined as a visit to an emergency room, and/or hospital admission, and/or an unscheduled visit to the GP, and/or a course of steroid tablets) in the last year; incidence of asthma worsenings (defined as occasions when asthma symptoms had become bothersome or hindering) in the past year; perceived asthma control; and activity limitations due to asthma.

The Asthma Control Questionnaire (ACQ; 6-item version with forced expiratory volume in 1 s question omitted) was used to assess asthma control. Patients were asked to recall their experiences over the past 7 days and respond to each question on a 7-point Likert scale, where 0 represents no impairment and 6 represents maximum impairment. Patients were defined as having well-controlled asthma (ACQ score < 0.75); not well-controlled asthma (ACQ score $0.75 - 1.5$), or uncontrolled asthma (ACQ score > 1.5).

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(ii) Overview of study results

10 GP practices were recruited for the study. The 10 practices who agreed to take part covered a wide geographical area. 3 of the practices did not recruit patients despite agreeing to take part: their allocation was distributed amongst the performing centres.

Kawakawa	Fully recruited
Whangarei	No recruits
Warkworth	Fully recruited
Tauranga	Over-recruited
Papamoa	Over-recruited
Rotorua	Over-recruited
Gisborne	No recruits
Levin	No recruits
Westport	Over-recruited
Dunedin	Fully recruited

The interviews were undertaken by 2 trained Research Review staff, between 20th May and 5th August 2007. Despite the questions being explained in as simple terms as possible, the researchers felt that patients struggled with the final two questions (Q23-24) and so we recommend that these results are interpreted with caution as there was a general pattern of many patients not being aware of what they should do and what they actually do when their asthma gets worse.

Of the 160 patients surveyed, 76% were female and 26% were current smokers. Ethnicity was given as European/Pakeha by 71% and Maori by 12%. Patients of a wide age range were surveyed.

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For the main outcome measure, the Asthma Control Questionnaire, the results are presented in the following table, and are compared to the results from the original INSPIRE study.

	NZ INSPIRE	%	INSPIRE
Uncontrolled	40	25	51%
Not well-controlled	47	29	21%
Well controlled	73	46	28%

In other words, over half of the patients surveyed had asthma that was uncontrolled or not well-controlled according to the ACQ questionnaire.

Other findings of note were:

- 27% thought their asthma was relatively bad in last 7 days
- 81% thought their asthma was well-controlled
- 77% were satisfied with their level of asthma control
- 76% were taking reliever at least daily, and 33% were taking at least 3-4 puffs of reliever a day
- 30% had been woken by asthma in the previous week
- Asthma symptoms on waking were reported by 51%
- 32% had activities limited by asthma in the previous week
- When feeling well, 37% use their preventer medication less frequently than daily
- 58% say they get more asthma symptoms because they do not take their medication regularly
- When their asthma is good, 35% still take 2 or more puffs of reliever per day
- Only 9% are not confident that they can manage their asthma symptoms when they get worse
- Around ½ of patients have an asthma management plan, and around ½ of those adhere to it

Comparisons with the Patient Outcomes Management Study (POMS) are difficult, as the methodologies of the POMS and NZ-INSPIRE studies are different. However, a very similar pattern of a great deal of symptoms, but satisfaction with asthma control levels, was seen.

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(iii) Detailed Results

NB. all % are rounded to nearest whole number

SC3 Age on your last birthday?

Age range	Number	%
16-20	16	10
21-30	30	19
31-40	28	18
41-50	34	21
51-60	20	13
>60	32	20

Q1 For how long have you been diagnosed with asthma?

Number of years with asthma	Number	%
<1 year	0	0
1-5 years	19	12
6-10 years	28	18
11-20 years	45	28
21-30 years	29	18
> 30 years	40	25

Q2 Ethnicity

Ethnicity	Number	%
European	10	6
Pakeha / New Zealander	104	65
Maori	19	12
Pacific Islander	0	0
Asian	1	1
Other or did not answer	26	16

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Q3 Do you smoke?

	Number	%
Current smoker	42	26%
Current non-smoker	118	74%

Q4 Gender:

	Number	%
Males	38	24%
Female	122	76%

Q5 Would you describe your asthma over the past 7 days as being relatively good or, would you describe it as being relatively bad?

	Number	%
Asthma relatively good in last 7 days	117	73%
Asthma relatively bad in last 7 days	43	27%

Q6 Do you think that your asthma is well-controlled?

	Number	%
Think that asthma is well-controlled	129	81%
Do not think that your asthma is well-controlled	23	14%
Don't know if asthma is well-controlled	8	5%

Q7 Are you satisfied with your level of asthma control?

	Number	%
Satisfied with level of asthma control	123	77%
Not satisfied with level of asthma control	30	19%
Don't know if satisfied with level of asthma control	7	4%

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Q8 On average, during the past week, how many puffs or inhalations of short-acting bronchodilator have you used each day?

	Number	%
None	38	24%
1-2 puffs/inhalations most days	68	43%
3-4 puffs/inhalations most days	34	21%
5-8 puffs/inhalations most days	7	4%
9-12 puffs/inhalations most days	9	6%
13-16 puffs/inhalations most days	3	2%
More than 16 puffs/inhalations most days	1	1%

Q9 In general, during the past week, how much time did you **wheeze**?

	Number	%
Never	55	34%
Hardly any of the time	23	14%
A little of the time	40	25%
A moderate amount of the time	21	13%
A lot of the time	12	8%
Most of the time	9	6%
All of the time	0	0%

Q10 In general, during the past week, how much **shortness of breath** did you experience because of your asthma?

	Number	%
None	68	43%
A very little	21	13%
A little	35	22%
A moderate amount	17	11%
Quite a lot	15	9%
A great deal	3	2%
A very great deal	1	1%

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Q11 On average, during the past week, how often were you **woken by your asthma** during the night?

	Number	%
Never	112	70%
Hardly ever	16	10%
A few times	17	11%
Several times	10	6%
Many times	2	1%
A great many times	1	1%
Unable to sleep because of asthma	2	1%

Q12 On average, during the past week, how **bad were your asthma symptoms when you woke up** in the morning?

	Number	%
No symptoms	79	49%
Very mild symptoms	33	21%
Mild symptoms	22	14%
Moderate symptoms	19	12%
Quite severe symptoms	4	3%
Severe symptoms	2	1%
Very severe symptoms	1	1%

Q13 In general, during the past week, how **limited were you in your daily activities** because of your asthma?

	Number	%
Not limited at all	108	68%
Very slightly limited	15	9%
Slightly limited	18	11%
Moderately limited	10	6%
Very limited	7	4%
Extremely limited	2	1%
Totally limited	0	0%

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Q14 When you are feeling well, do you use your preventer medication less frequently than daily?

	Number	%
Yes, use my preventer medication less frequently than daily when well	59	37%
No, do not use my preventer medication less frequently than daily when well	101	63%
Don't know	1	1%

Q15 Which of the following triggers . if any . cause your symptoms to get worse?

Trigger	Number	%
Allergy	117	73%
Infection (virus, cold, flu etc.)	109	68%
Exercise	90	56%
Weather	115	72%
Stress	48	30%
Not taking my medication regularly	93	58%
None	8	5%
Others	1	1%

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Q16 How many puffs of reliever do you take each day:

	Answer	Number	%
When asthma is good	0	83	52%
	1	21	13%
	2	35	22%
	3	5	3%
	4	14	9%
	>4	2	1%
When asthma is bad	0	3	2%
	1-2	32	20%
	3-4	42	26%
	5-6	30	19%
	7-8	22	14%
	9-12	19	12%
	>12	12	8%
Puffs of reliever in a typical week	0	33	21%
	1-2	51	32%
	3-4	15	9%
	6-11	15	9%
	12-20	26	16%
	21-49	15	9%
	>50	5	3%

Q17 When your asthma symptoms become worse, how confident are you generally . if at all . that you can manage your asthma without the need to visit your physician?

	Number	%
Not at all confident	14	9%
Quite confident	87	54%
Very confident	59	37%

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Q18 Approximately how many times in the past year have you visited your physician or asthma nurse for reasons related to your asthma, aside from picking up a prescription?

Number of times	Number	%
0	73	46%
1	36	23%
2	20	13%
3	15	9%
4	4	3%
5	4	3%
> 5	8	5%

Q19 Has your physician or asthma nurse provided you with an asthma treatment plan?

	Number	%
Yes, provided with an asthma treatment plan	79	49%
No, not provided with an asthma treatment plan	81	51%

Q20 If yes, do you strictly adhere to this plan or do try to manage your asthma in your own way?

	Number	%
Adhere to plan	38	24%
Manage own way	41	26%
Not applicable	81	51%

Q21 Please tell me, on average, the number of times per year you experience an asthma attack that has resulted in any of the following: a visit to accident and emergency and / or hospital admission and / or an unscheduled visit to your GP and / or a course of oral steroids.

Number of times per year	Number	%
0	94	59%
1	38	24%
2	14	9%
3	5	3%
4	8	5%
5	1	1%
> 5	0	0%

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Q22 How many days have you missed from school or work in the last year, due to asthma?

Number of days	Number	%
0	112	70%
1-5	18	11%
6-10	5	3%
11-15	1	1%
16-20	2	1%
> 20	1	1%
Not applicable	21	13%

Q23 When you notice signs or warnings that your asthma symptoms are becoming bothersome, how many puffs of each asthma medication . if any . do you use on an average day.

	Answer	Number	%
Reliever	0	5	3%
	1-2	61	38%
	3-4	47	29%
	5-6	20	12%
	7-10	13	8%
	>10	5	3%
	N/A or do not know	9	6%
ICS (incl combination)	0	3	2%
	1-2	49	31%
	3-4	70	44%
	5-6	17	11%
	7-10	2	1%
	>10	0	0%
	N/A or do not know	19	12%
Other eg. LABA, nebulizers	0	2	1%
	1-2	27	17%
	3-4	33	21%
	5-6	7	4%
	7-10	1	1%
	>10	0	0%
	N/A or do not know	90	56%

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Q24 When your asthma is at its worst, such that you decide to see the doctor, before seeing the doctor, how many puffs of each asthma medication do you use on an average day?

	Answer	Number	%
Reliever	0	4	2%
	1-2	12	8%
	3-4	28	18%
	5-6	29	18%
	7-10	34	21%
	>10	38	24%
	N/A or do not	15	9%
	ICS (incl combination)	0	2
1-2		33	21%
3-4		64	40%
5-6		26	16%
7-10		14	9%
>10		1	1%
N/A or do not know		20	13%
Other eg. LABA, nebulizers		0	2
	1-2	19	12%
	3-4	29	18%
	5-6	10	6%
	7-10	5	3%
	>10	4	3%
	N/A or do not know	91	57%

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