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Characteristics and outcomes of individuals reporting low back pain, ePPOC Information Series No. 2

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Abstract

The International Association for the Study of Pain (IASP) named 2021 the 'Global Year About Back Pain'. Therefore, this study examines back pain, specifically, low back pain (LBP). The aims are to determine the prevalence of LBP amongst individuals seeking specialist pain management in Australia and New Zealand, and to compare their clinical characteristics and treatment outcomes to those who do not experience primary LBP.

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Characteristics and outcomes of individuals reporting low back pain

EPPOC INFORMATION SERIES NO.2 2021

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Background

ePPOC is an integrated persistent pain outcome collaboration which aims to improve the quality of care and outcomes for people who experience chronic pain. ePPOC (and its paediatric counterpart, PaedePPOC) involves the collection of a standard set of information by specialist pain services about their patients, the services they provide and the outcomes the patients achieve.

The ePPOC questionnaires include questions that ask patients to identify the body regions where they experience pain – one ‘main’ pain area and all other areas of ‘secondary’ pain.

Aims

The International Association for the Study of Pain (IASP) named 2021 the ‘Global Year About Back Pain’. Therefore, this study examines back pain, specifically, low back pain (LBP). The aims are to determine the prevalence of LBP amongst individuals seeking specialist pain management in Australia and New Zealand, and to compare their clinical characteristics and treatment outcomes to those who do not experience primary LBP.

Methods

Data included in this analysis are for people aged 18 and over who were referred from 01 January 2018. Included persons must have completed the episode of care, along with a questionnaire at both referral and episode end (n = 13,856).

This study compares three cohorts – patients who reported at referral that:

1. The lower back was the primary site of their pain (Primary LBP)
2. The lower back was one of the secondary pain sites (Secondary LBP)
3. They did not experience pain in the lower back (No LBP)

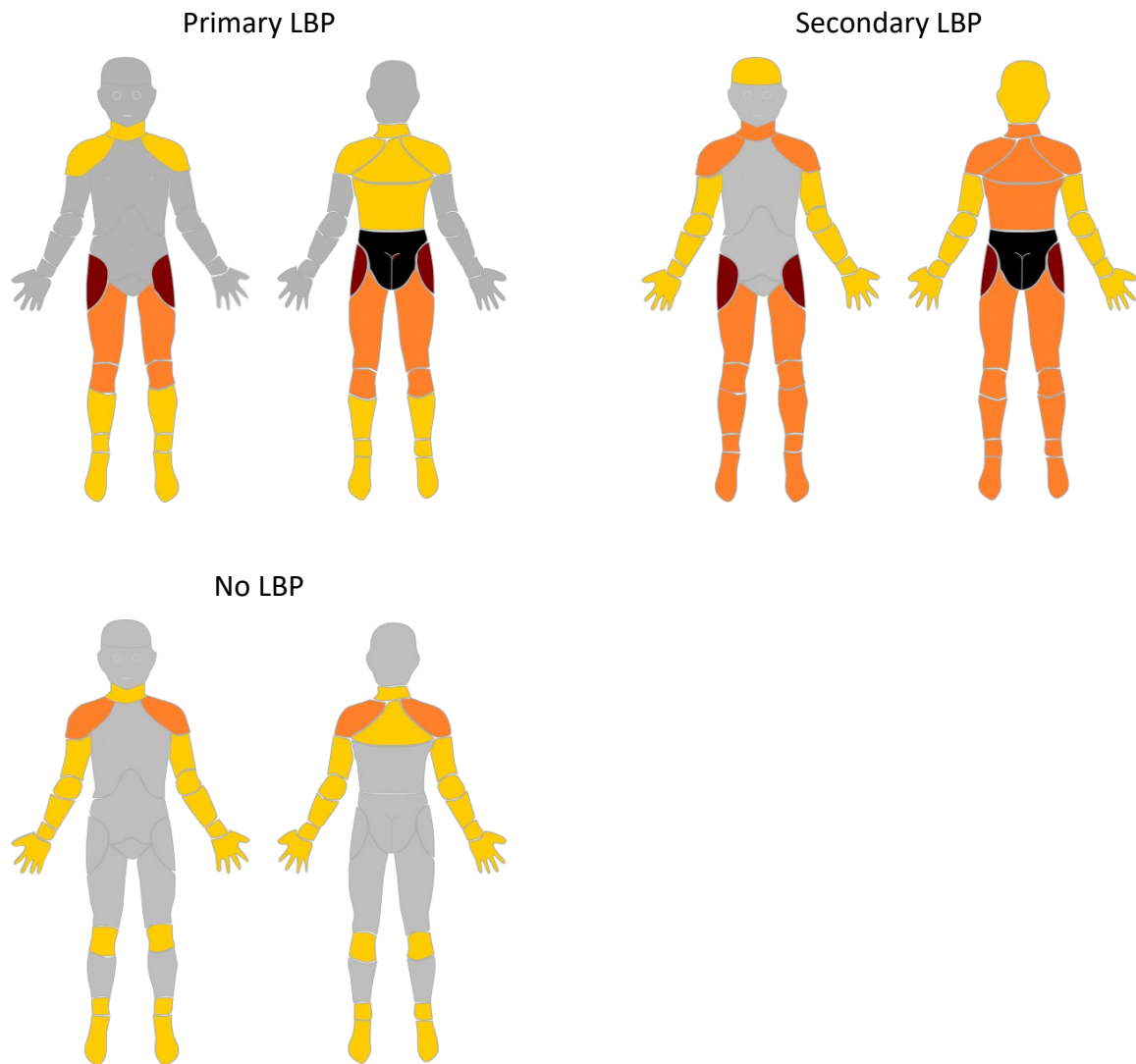
Patient characteristics were investigated using descriptive statistics (means, standard deviations, frequencies, and percentages). ANOVA and Chi-square tests assessed differences between the groups as appropriate.

Results

One in three patients (33%) reported experiencing their main pain in the lower back. Nearly one in four (24%) reported the lower back as one of their secondary pain sites. A relatively large proportion of patients (43%) reported that they did not experience LBP at referral.

Figure 1 illustrates the three groups, showing the proportion of patients reporting pain in each body region. Patients with primary LBP were likely to also report pain in the hips and upper legs (thighs and knees). Those with secondary LBP also commonly reported pain in the hips, as well as more widespread pain involving the legs, mid and upper back, shoulders and neck. Pain was primarily experienced in the upper body in patients who reported no LBP, in particular the shoulders but also upper back, neck and arms.

Figure 1. Pain sites by back pain group (left = front of body, right = back)



Percent of patients identifying pain region: 0 to 19% 20 to 39% 40 to 59% 60 to 79% 80 to 100%

The socio-demographic characteristics of patients according to their pain region at referral are shown in Table 1. Sex and pain region were significantly associated. Men were more likely to report primary LBP, while secondary LBP was more common in women.

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¹ For profile information regarding adults seeking pain management in New Zealand see the 2021 ePPOC Information series 1: Profile of adult patients referred for specialist pain management in New Zealand <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=2197&context=ahsri#page=3>

Table 1 Socio-demographic characteristics of patients, by pain region

	Primary LBP	Secondary LBP	No LBP	Total
Number (%)	4515 (32.6)	3360 (24.2)	5981 (43.2)	13856 (100.0)
Sex (%)				
Male	49.3	39.5	45.7	45.4
Female	50.7	60.5	54.3	54.6
Mean age at referral (years)	47.9	46.9	47.3	47.4
Country of birth				
Australia	37.3	37.4	27.0	32.9
New Zealand	37.6	39.4	49.3	43.1
Other	25.1	23.2	23.7	24.0
Socioeconomic area disadvantage – quintile %				
Q1 – most disadvantage	18.3	16.2	17.1	17.3
Q2	20.3	18.8	21.0	20.3
Q3	22.9	22.8	21.6	22.4
Q4	20.1	21.0	22.0	21.1
Q5 – least disadvantage	18.3	21.1	18.3	19.0
Work status – n (%)				
Working	39.3	37.6	41.2	39.7
Not working due to pain	41.0	40.3	37.6	39.4
Not working (other reasons)	19.7	22.0	21.2	20.9

Clinical characteristics of patients by pain region at referral are shown in Table 2. Pain duration of more than 5 years was more common in patients reporting LBP (primary or secondary) compared to no LBP (>31% vs 19%). Patients reporting primary LBP were more likely to be using opioid medications at referral than those reporting main pain at other locations. Low back pain (secondary and primary) was also associated with greater likelihood of reporting comorbid conditions, including mental health conditions as well as arthritis, respiratory, digestive and muscle, bone and joint problems.

Table 2 Clinical characteristics at referral by pain region

	Primary LBP	Secondary LBP	No LBP	Total
Pain Duration at referral (%)				
Less than 12 months	29.4	27.3	38.4	32.8
12 months to 2 years	18.4	18.4	22.1	20.0
2-5 years	21.1	21.1	20.8	21.0
More than 5 years	31.2	33.2	18.8	26.3
Medication use (%)				
Opioids	54.2	49.0	39.6	46.8
Paracetamol	53.6	51.7	48.7	51.1
Antidepressants	38.7	40.0	35.0	37.5
Non-steroidal anti-inflammatory	41.5	38.8	35.5	38.3
Anticonvulsants	29.2	28.6	27.0	28.1
Sedatives	11.4	11.3	8.3	10.1

	Primary LBP	Secondary LBP	No LBP	Total
Cannabinoids	0.5	0.7	0.5	0.5
Comorbidities (5 most common)				
Mental health condition	35.5	39.8	29.2	33.8
- Depression	28.1	30.7	21.6	25.9
- Anxiety	23.4	28.8	19.8	23.1
- PTSD	6.9	11.7	6.5	7.9
Muscle, bone and joint problems	24.3	33.4	19.4	24.4
Arthritis	26.0	28.0	18.7	23.3
Digestive problems	20.6	25.6	16.0	19.8
Respiratory	19.5	21.9	15.9	18.5
Widespread pain	31.5	47.4	13.2	27.4
BMI - % outside normal weight range	76.0	74.0	72.8	74.2

Consistent with the pain locations identified in Figure 1, pain was more likely to be widespread² in patients reporting secondary LBP (47% of patients) and least common when there was no LBP (13%). Nearly 1 in 3 patients with primary LBP reported widespread pain.

Average patient-reported scores on the assessment tools at referral are shown in Table 3. These indicate that patients with LBP (primary or secondary) reported significantly greater severity on all measures compared to those who did not report LBP.

Table 3 Mean scores on the assessment tools at referral by pain region

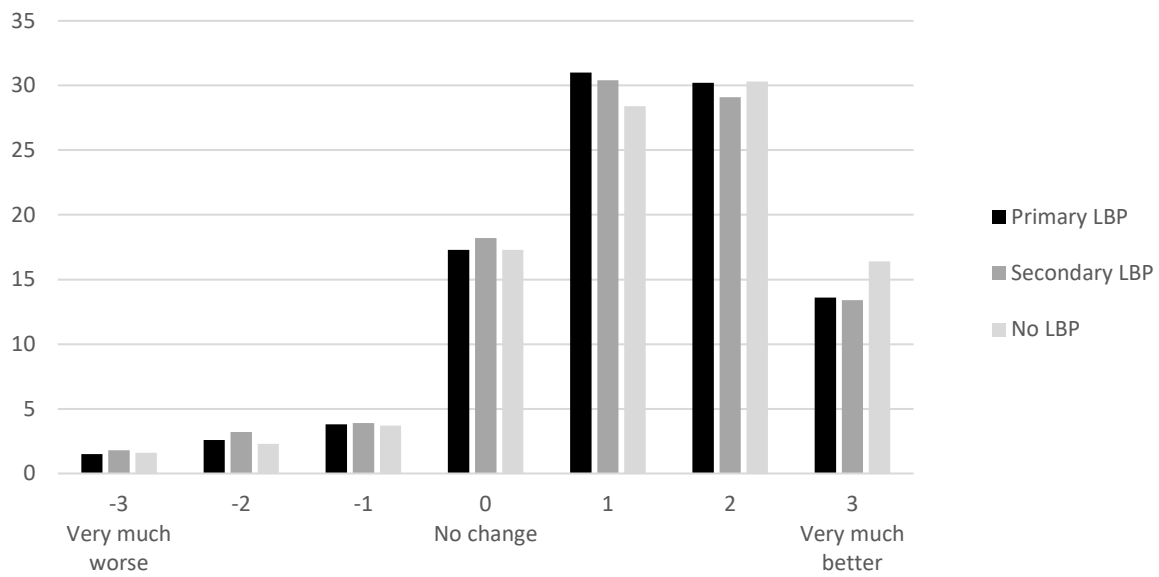
Mean scores on assessment tools (SD)	Primary LBP	Secondary LBP	No LBP	Total
Average pain	5.8 (1.7)	5.9 (1.7)	5.6 (1.8)	5.8 (1.8)
Pain Interference	6.8 (1.9)	6.9 (1.9)	6.3 (2.0)	6.6 (1.9)
Depression	17.6 (11.9)	18.0 (12.0)	16.1 (11.7)	17 (11.9)
Anxiety	11.5 (9.7)	12.6 (10.0)	10.9 (9.5)	11.5 (9.7)
Stress	19.5 (10.6)	20.1 (10.5)	18.7 (10.7)	19.3 (10.6)
Pain catastrophising	25.5 (13.0)	25.5 (13.1)	24.2 (13.1)	24.9 (13.1)
Pain self-efficacy	21.9 (12.0)	22.5 (12.0)	24.2 (12.5)	23 (12.3)

Outcomes following pain management

Approximately 75% of patients in all three groups reported some positive improvement following pain management (scores of 1, 2, or 3 on the Global Rating of Change). Patients with no LBP were somewhat more likely to report that they were 'very much better' following treatment (see Figure 2).

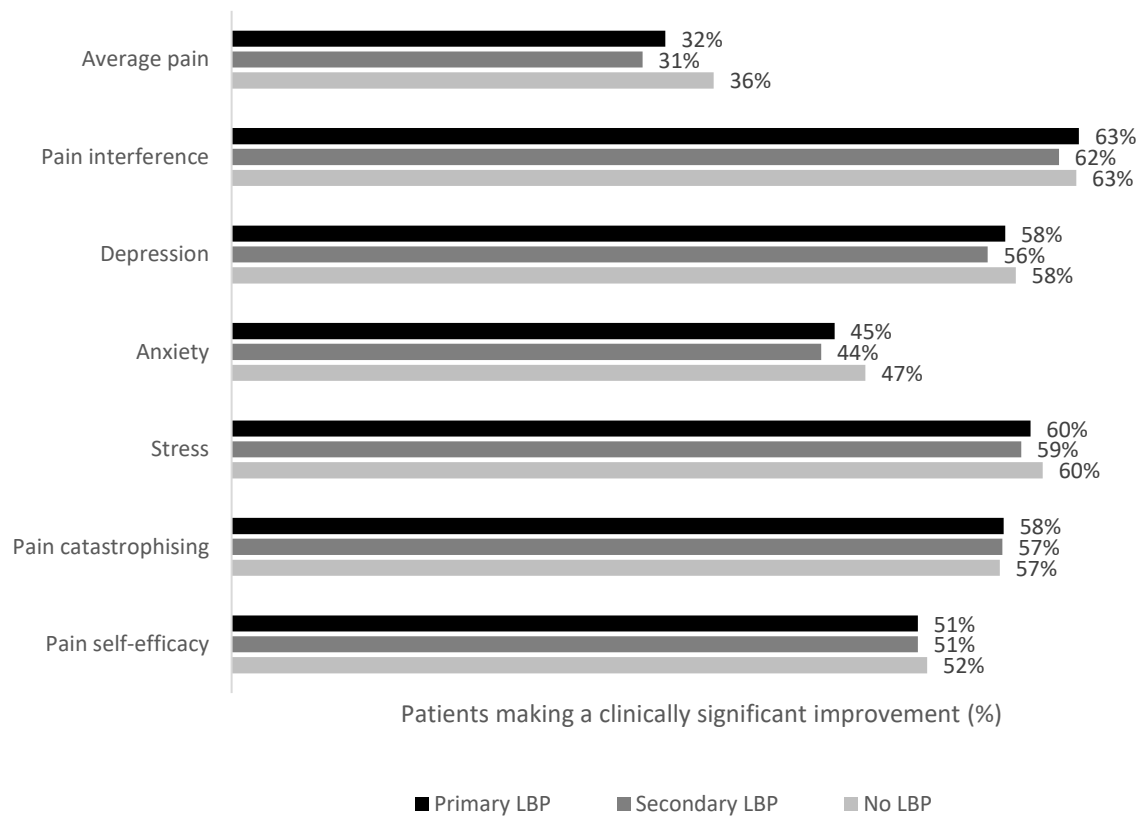
² For this study, a person was considered to have widespread pain if they reported pain in ≥ 7 regions using the CARRA Body Map. Von Bayer CL, et al. 2011, 'Pain charts (body maps or manikins) in assessment of location of paediatric pain', Pain Management, vol. 1 num. 1, pp 61-68. (Source: Childhood Arthritis and Rheumatology Research Alliance, www.carragroup.org)

Figure 2 Global rating of change (overall) at episode end, by lower back pain at referral



The proportion of patients who made clinically significant improvement on the individual assessment tools is shown in Figure 3. The results for the three groups did not differ on most measures, with the exception of average pain, where patients without LBP were more likely to report clinically significant improvement.

Figure 3 Proportion of patients who made clinically significant improvement at episode end



Summary

Whilst the lower back was the main pain site for one in three patients and a secondary site for one in four, many patients (43%) did not experience pain in the lower back. A number of socio-demographic and clinical factors were associated with experiencing LBP, including sex, country of birth, pain that was more widespread, greater pain duration and opioid use.

At referral, average patient-reported scores on all assessment tools were higher for those with LBP (primary or secondary), indicating greater severity compared to those without LBP. Despite greater clinical severity at referral, outcomes for the groups were similar. However, those without LBP were more likely to report clinically significant improvement in scores for average pain severity and that they felt 'very much better' post treatment.

Overall, almost three in four patients (74.8%) experiencing LBP reported positive improvement to varying degrees following treatment suggesting that pain management is effective for those experiencing low back pain.

Series List

2018

No.1 2018: *Normative data for patients referred for specialist pain management in Australia*

No.2 2018: *Normative data for children and adolescents referred for specialist pain management in Australia*

No.3 2018: *Carer-proxy and child self-reported ratings of pain and quality of life*

2019

No. 1 2019: *Socioeconomic disadvantage and referral to pain management services in Australasia*

No. 2 2019: *Proximity to specialist pain management services in Australia*

2021

No.1 2021: *Profile of adult patients referred for specialist pain management in New Zealand*

No.2 2021: *Characteristics and outcomes for individuals reporting low back pain*