Supplementary material 1

Questions used for the first definition of acute low back pain ("non-chronic") from the Canadian adaptation of the NIH minimum dataset for chronic low back pain (Lacasse et al., 2017 – CMAJ Open).

1- How long has low-back pain been an ongoing problem for you?
    o Less than 1 month
    o 1-2 months
    o 3-5 months
    o 6-11 months
    o 1-5 years
    o More than 5 years

2- How often has low-back pain been an ongoing problem for you over the past 6 months?
    o Every day or nearly every day in the past 6 months
    o At least half the days in the past 6 months
    o Less than half the days in the past 6 months

Participants were considered as acute low back pain ("non-chronic") if they meet one of these two options:

1- Less than 3 months (i.e. "Less than 1 month" or "1-2 months") regardless of the answer to question 2.
2- 3 months and more (i.e. "3-5 months", "6-11 months", "1-5 years", "More than 5 years") only if low-back pain was an ongoing problem for "Less than half the days in the past 6 months"

Considering the dichotomic nature of this classification, participants were considered as chronic low back pain for any other combinations of answers (i.e. if pain was present for 3 months and more for at least half the days or nearly everyday or every day in the past 6 months).

Supplementary material 2

This Supplementary material provide information about comparisons of group's characteristics between three subgroups derived from combining the three definitions.

Methods

Derived subgroups: Combining the three aLBP definitions, three subgroups were derived: 1) participants with aLBP according to all three definitions ("all aLBP"), 2) participants with aLBP only using the "non-chronic" ("only non-chronic") and 3) participants with aLBP only with to acute definition ("only-acute").

Statistical analysis: Characteristics of derived subroups were compared using Kruskal-Wallis Test for continuous variables and Chi-squared / Fisher's tests for categorical variables.

Results:

Comparisons between the derived subgroups

Supplementary Table 1 presents comparisons between the three derived subgroups (Figure 1). The "only acute" subgroup had higher scores for pain interference, emotional distress/depression, and pain impact and lower scores for physical function and health utility compared to the "all aLBP" and "only non-chronic" subgroups. Pain impact score was higher in "all aLBP" subgroup compared to "only non-chronic" subgroup. Pain intensity was higher in "only acute" compared to "only non-chronic" subgroup. More participants in the "only acute" subgroup had catastrophizing thoughts compared to "only non-chronic" and "all aLBP". Less participants in the "only non-chronic" subgroup had kinesiophobia thoughts compared to "only acute" and "all aLBP" subgroups.

For demographics characteristics, more participants had pain for less than 3 months in "all aLBP" compared to the other subgroups, and less for more than 1 year. Less participants were 18-40 years old in the "only acute" compared to other subgroups, and less participants in the "only non-chronic" subgroup were 60 years and older compared to the "only acute". More participants never smoked in "all aLBP" than in the "only acute" subgroup.

eTable 1. Characteristics of the three derived subgroups from the three aLBP definitions

Variable	Category	All aLBP n=327		Only non-chronic n=422		Only acute n=255		p-value
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	
Age groups (years)	18 - 40	156	47.7 (41.2,54.3)#	208	49.3 (43.5,55.1)+	83	32.5 (26.0,39.9)#+	<0.0001†
	41 - 60	152	46.5 (40.0,53.1)	195	46.2 (40.5,52.0)	139	54.5 (47.0,61.8)	
	>60	19	5.8 (3.4,9.7)	19	4.5 (2.6,7.6)+	33	12.9 (8.7,18.8)+	
Sex at birth	Female	176	53.8 (47.2,60.3)	211	50.0 (44.2,55.8)	149	58.4 (50.9,65.6)	0.1233†
	Male	146	44.6 (38.2,51.3)	201	47.6 (41.9,53.4)	102	40.0 (33.0,47.5)	
Obesity	<30 kg/m2	191	58.4 (51.8,64.7)	246	58.3 (52.5,63.9)	144	56.5 (49.0,63.7)	0.9948†
	>=30 kg/m2	122	37.3 (31.2,43.9)	155	36.7 (31.3,42.5)	92	36.1 (29.3,43.5)	
Smoking status	Never smoked	165	50.5 (43.6,57.3)#	192	45.5 (39.6,51.6)	84	32.9 (26.1,40.6)#	0.0005†
	Current smoker	58	17.7 (13.1,23.6)	71	16.8 (12.8,21.8)	66	25.9 (19.7,33.3)	
	Ex-smoker	96	29.4 (23.5,36.0)	144	34.1 (28.6,40.1)	91	35.7 (28.6,43.4)	
Pain duration	Less than a month	65	19.9 (14.7,26.3)*#	7	1.7 (0.6,4.2)*	1	0.4 (0.0,3.3)#	<0.0001§
	1-2 months	132	40.4 (33.5,47.7)*#	14	3.3 (1.7,6.5)*+	0	0 (0.0, 0.0)#+	
	3-5 months	11	3.4 (1.6,7.1)	14	3.3 (1.7,6.5)	18	7.1 (3.9,12.4)	
	6-11 months	7	2.1 (0.8,5.5)	30	7.1 (4.5,11.2)	19	7.5 (4.2,12.8)	
	1-5 years	38	11.6 (7.7,17.1)*#	152	36.0 (30.1,42.4)*	95	37.3 (29.9,45.3)#	
	More than 5 years	74	22.6 (17.1,29.3)*#	205	48.6 (42.2,55.0)*	122	47.8 (39.9,55.9)#	
Kinesiophobia	Agree	96	29.4 (23.7,35.7)*	78	18.5 (14.4,23.4)*+	99	38.8 (31.8,46.3)+	<0.0001†
	Disagree	228	69.7 (63.3,75.4)	338	80.1 (75.1,84.3)+	155	60.8 (53.3,67.8)+	
Catastrophizing	Agree	72	22.0 (17.0,28.0)#	89	21.1 (16.7,26.2)+	171	67.1 (59.7,73.7)#+	<0.0001†
	Disagree	252	77.1 (71.1,82.1)#	328	77.7 (72.5,82.2)+	83	32.5 (26.0,39.9)#+	

	Score allowed	n	Mean (SD); Median (95% CI)	n	Mean (SD); Median (95% CI)	n	Mean (SD); Median (95% CI)	KW
Pain intensity	0-10	327	5.9 (2.0);6.0 (6.0,7.0)	421	5.3 (2.0);5.0 (5.0,6.0)+	254	6.8 (1.7);7.0 (7.0,7.0)+	<0.0001
Pain interference	4-20	322	12.7 (4.2);12.0(12.0,13.0)#	414	11.7 (4.0);12.0 (11.0,12.0)+	248	14.3 (3.4);15.0 (14.0,15.0)#+	<0.0001
Physical function	4-20	319	14.8 (3.9);15.0 (15.0,16.0)#	408	16.1 (3.4);17.0 (16.0,17.0)+	249	13.3 (3.8);13.0 (13.0,14.0)#+	<0.0001
Emotional distress/depression	4-20	322	8.7 (4.0);8.0 (7.0,8.0)#	410	8.3 (4.0);8.0 (7.0,8.0)+	249	10.9 (4.3);11.0 (10.0,12.0)#+	<0.0001
Sleep disturbances	4-20	317	12.2 (3.5);12.0 (12.0,13.0)	411	11.9 (3.6);12.0 (11.0,12.0)	240	13.4 (3.4);13.0 (12.0,14.0)	<0.0001
Pain Impact Score	8-50	315	26 (6.4);25.0 (25.0,26.0)*#	402	24.3 (6.0);24.0 (23.0,24.0)*+	243	28.2 (5.9);28.0 (27.0,29.0)#+	<0.0001
Health Utility Score	-0.148, 0.949	318	0.7 (0.2);0.8 (0.8,0.8)#	413	0.7 (0.2);0.8 (0.8,0.8)+	254	0.6 (0.2);0.7 (0.6,0.7)#+	<0.0001

aLBP= Acute low back pain. SD= Standard deviation. 95% CI=95% confidence interval. 95% CI comparisons: *Significant difference between the "all aLBP" and aLBP by "only non-chronic subgroups. # Significant difference between the "all aLBP" and the "only acute" subgroups. + Significant difference between the "only non-chronic" and "only acute" subgroups. † Chi2 test. §Fisher's exact test. KW=Kruskal–Wallis test. The Dunn test showed significant differences for all pairwise comparisons with the exception of the comparison between "all aLBP" and the "only non-chronic" subgroups. The subgroups are mutually exclusive.

eFigure 1: Derived subgroups from the combination of acute low back pain definitions and underlying answers to classification questions.

- « Yes » at « *Did your back pain begin less than 3 months ago?"*
  AND
- « Yes » at « *If yes, was this episode of pain preceded by a period of at least 3 months without pain in your lower back?* »
  AND
- meeting the NIH definition of **chronic** LBP
  - pain > 3 months at the question « *How long has low-back pain being an ongoing problem for you?* »
  - Pain is present more than half the days

« New episode » definition

« Non-chronic » definition

« Only non-chronic »

« All aLBP »

< 3 mo **OR** > 3 mo with
pain less half days (NIH)
AND
pain < 3 months
AND
pain-free period

« Only acute »

- « Yes » at « *Did your back pain begin less than 3 months ago?"*
  AND
- « No » at « *If yes, was this episode of pain preceded by a period of at least 3 months without pain in your lower back?* »
  AND
- meeting the NIH definition of **chronic** LBP
  - pain > 3 months at the question « *How long has low-back pain being an ongoing problem for you?* »
  - Pain is present more than half of the days

Meeting the « non-chronic » definition
- **Option 1:**
  - « Less than a month » and « 1-2 months » at « *How long has low-back pain been an ongoing problem for you* »?

OR
- **Option 2**
  - 3 months and more at « *How long has low-back pain been an ongoing problem for you* »?
  If
  - « Less than half the days in the past 6 months »

AND
- « No » at *Did your back pain begin less than 3 months ago?*

« Acute » definition

- « Yes » at « *Did your back pain begin less than 3 months ago?"*
  AND
- « No » at « *If yes, was this episode of pain preceded by a period of at least 3 months without pain in your lower back?* »
  AND
- Meeting the « non-chronic » definition (option 1 or 2)