

Doctors With a Special Interest in Back Pain Have Poorer Knowledge About How to Treat Back Pain

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Study Design. We conducted an observational study using mailed questionnaires to 3 random samples of general practitioners from Victoria and New South Wales, Australia in 1997, 2000, and 2004.

Objective. To determine whether general practitioners' beliefs about low back pain (LBP) differ according to whether they have a special interest in back pain, musculoskeletal, or occupational medicine; and whether these beliefs are modified by having had continuing medical education (CME) about back pain in the previous 2 years.

Summary of Background Data. Physician surveys continue to demonstrate that general practitioners only partially manage LBP in an evidence-based way. Identified barriers to changing physician behavior, in regard to management of back pain, have included patient factors such as their past back pain experiences and preferences for care as well as physician beliefs about the association of pain and activity; although the influence of physician special interests has not been studied.

Methods. Back pain beliefs of different subsets (special interests vs. no special interests and CME vs. no CME) were compared using relative risks (RRs) adjusted for state and survey. The analysis was then repeated including all special interests and recent back pain CME in the model.

Results. Responses were received from 3831 general practitioners (overall response rate [RR]: 38.2%). Physicians with a special interest in LBP were more likely to believe that complete bed rest and avoidance of work is appropriate for acute low back pain (RR: 1.89 [95% CI: 1.53–2.33] and 1.55 [95% CI: 1.31–1.83], respectively) and lumbar spine radiographs are useful (RR: 1.36 [95% CI: 1.21–1.51]). The disparity between those with and without a special interest in LBP was still evident after adjusting for the presence of other special interests and recent CME. After adjusting for the

presence of other special interests and recent CME, there were no important differences in back pain beliefs between those with and without a special interest in musculoskeletal medicine, while those with a special interest in occupational medicine and those who had received recent CME had better beliefs.

Conclusion. A special interest in back pain is associated with back pain management beliefs contrary to the best available evidence. This has serious implications for management of back pain in the community.

Key words: back pain, patient care, continuing medical education, cross-sectional study. **Spine 2009;34:1218–1226**

Physician surveys continue to demonstrate that general practitioners only partially manage low back pain (LBP) in an evidence-based way.^{1,2} This is despite increasing evidence that positive advice to stay active and continue or resume ordinary activities is more effective than rest³ and early investigation and specialist referral are unwarranted in the majority of cases.⁴ In part, this may reflect physician knowledge and beliefs,¹ although physician behavior may be influenced by many factors including patient expectation and other psychosocial factors.^{5–8}

Systematic reviews of trials of interventions to improve professional practice have shown that passive strategies such as providing access to medical education materials alone are ineffective.^{9–11} Most other strategies are effective under some conditions, but none are effective in all situations, suggesting that the local setting is also an important consideration.^{12,13} Multifaceted approaches have also been shown to be more effective than single interventions.¹³

There are many barriers to changing physician behavior in regard to the management of back pain. Identification and targeting of explicitly identified barriers to change may be invaluable in effecting improvements in physician behavior. Studies that have explored factors that determine physician nonadherence to guidelines for management of LBP have identified the influence of patients' past experiences of back pain, interpretations of their preferences, and the inclination to give in to patients' preferences for nonevidence-based care (e.g., radiographs).^{14–16} Several studies have found that providers treating LBP may hold alternative beliefs regarding the association of pain and activity that may influence their practice behavior.¹⁷ Recognition of external barriers such as these is essential when contemplating strategies to effect a change in physician behavior. The preparedness of the clinicians to change⁹ may be another important barrier that has not been well studied to date.

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Table 1. Characteristics by CME and Special Interest Groups

	Special Interest in Low Back Pain		Special Interest in Musculoskeletal Medicine		Special Interest in Occupational Medicine		CME in Back Pain in Last 2 Yr	
	Yes (n = 599) n (%)	No (n = 3232) n (%)	Yes (n = 867) n (%)	No (n = 2964) n (%)	Yes (n = 384) n (%)	No (n = 3447) n (%)	Yes (n = 1261) n (%)	No (n = 2570) n (%)
Male	475 (80)	1998 (62)†	695 (81)	1778 (61)†	293 (77)	2180 (64)†	875 (67)	1586 (63)†
Graduation year, median (95% CI)	1973 (1972–1974)	1979 (1978–1979)†	1975 (1974–1976)	1979 (1978–1979)†	1974 (1968–1981)†	1978 (1978–1979)	1977 (1976–1978)	1979 (1978–1979)†
Practice location								
Metropolitan	410 (69)	2058 (65)	584 (67)	1884 (65)	261 (67)	2207 (65)*	793 (63)	1662 (660)
Regional	85 (14)	564 (18)	149 (17)	500 (17)	70 (18)	579 (17)	231 (18)	415 (16)
Rural	102 (17)	570 (18)	133 (18)	539 (15)	49 (13)	623 (18)	231 (18)	440 (18)
Practice type								
Bulk billing or 24 hr	399 (68)	2027 (64)	576 (68)	1850 (64)*	252 (68)	2174 (65)	805 (65)	1614 (65)
Conventional	192 (33)	1119 (36)	273 (32)	1038 (36)	119 (32)	1192 (35)	429 (35)	874 (35)
No. doctors in practice								
Solo	189 (32)	596 (19)†	262 (30)	523 (18)†	97 (25)	688 (20)*	310 (25)	472 (19)†
2–4	254 (43)	1343 (42)	350 (25)	1247 (43)	144 (38)	1453 (43)	527 (42)	1063 (42)
5 or more	154 (26)	1249 (39)	254 (29)	1149 (39)	142 (37)	1261 (37)	977 (39)	419 (33)
Post-graduate training								
Hospital internship	468 (78)	2325 (72)*	684 (75)	2145 (72)	283 (73.7)	2510 (73)	934 (74)	1849 (74)
Family medicine	181 (30)	1419 (44)†	293 (34)	1307 (44)†	141 (37)	1459 (42)*	494 (39)	1096 (43)*
Special interest in								
back pain			460 (53)	139 (5)†	188 (49)	411 (12)†	331 (26)	268 (11)†
Special interest in musculoskeletal medicine	460 (77)	407 (13)†			214 (56)	653 (19)†	452 (36)	413 (16)†
Special interest in occupational medicine	188 (31.4)	196 (6)	214 (25)	170 (6)†			197 (16)	185 (7)†
CME for back pain in the past 2 yr	331 (55)	930 (29)†	452 (52)	809 (28)†	197 (52)	1064 (31)†		
Mean (SD) no. of low back pain patients seen per week	11.2 (14)	6.2 (6)†	10.2 (11)	6.0 (7)†	10.7 (11)	6.7 (8)†	8.5 (11)	6.3 (7)†
Mean percentage (SD) of back pain patients who are on workers' compensation	31.3 (28)	31.5 (26)	31.3 (26)	31.9 (27)	46.5 (29)	29.8 (25)†	32.7 (27)	31.1 (26)

* $P < 0.05$.† $P < 0.005$.

The aim of this study was to determine whether general practitioners' beliefs about LBP differ according to whether they have a special interest in back pain, musculoskeletal medicine or occupational medicine; and whether these beliefs are modified by having had continuing medical education (CME) about back pain in the previous 2 years.

Materials and Methods

We have previously reported the results of 3 separate mailed surveys of cross-sectional random samples of general practitioners residing in 2 adjacent Australian states, Victoria and New South Wales in 1997, 2000, and 2004.^{18,19} These were performed as part of an evaluation to determine the effectiveness of a population-based media campaign designed to alter beliefs about back pain conducted in Victoria between 1997 and 1999. The surveys were conducted before the commencement of the campaign (survey 1, August 1997), 2½ years after the commencement of the campaign (survey 2, February 2000) and 4½ years after cessation of the campaign (or almost 7 years after commencement of the campaign) (survey 3, May 2004).

For the first 2 surveys, in Victoria the sampling frame was the Victorian WorkCover Authority database and, as no centralized WorkCover database of general practitioners is available in New South Wales, for New South Wales the Australasian Medical Publishing Company (AMPCo) database was used.²⁰ The AMPCo database was used for the third survey in both states. For all surveys, NSW physicians with postcodes abutting Victoria were excluded and participants were blinded to the true study purpose, being informed that Monash University researchers were interested in current general management of LBP. To maintain confidentiality of response, the researchers did not have access to identifying information. The Monash University Human Research Ethics Committee approved all surveys.

Instrument

The questionnaire was originally modified from a questionnaire developed in Ontario, Canada.²¹ It included a set of questions aimed at eliciting knowledge about the management of acute LBP and attitudes toward these patients (the survey instrument is available on request). The questions were phrased as statements and responses were on a 5-point

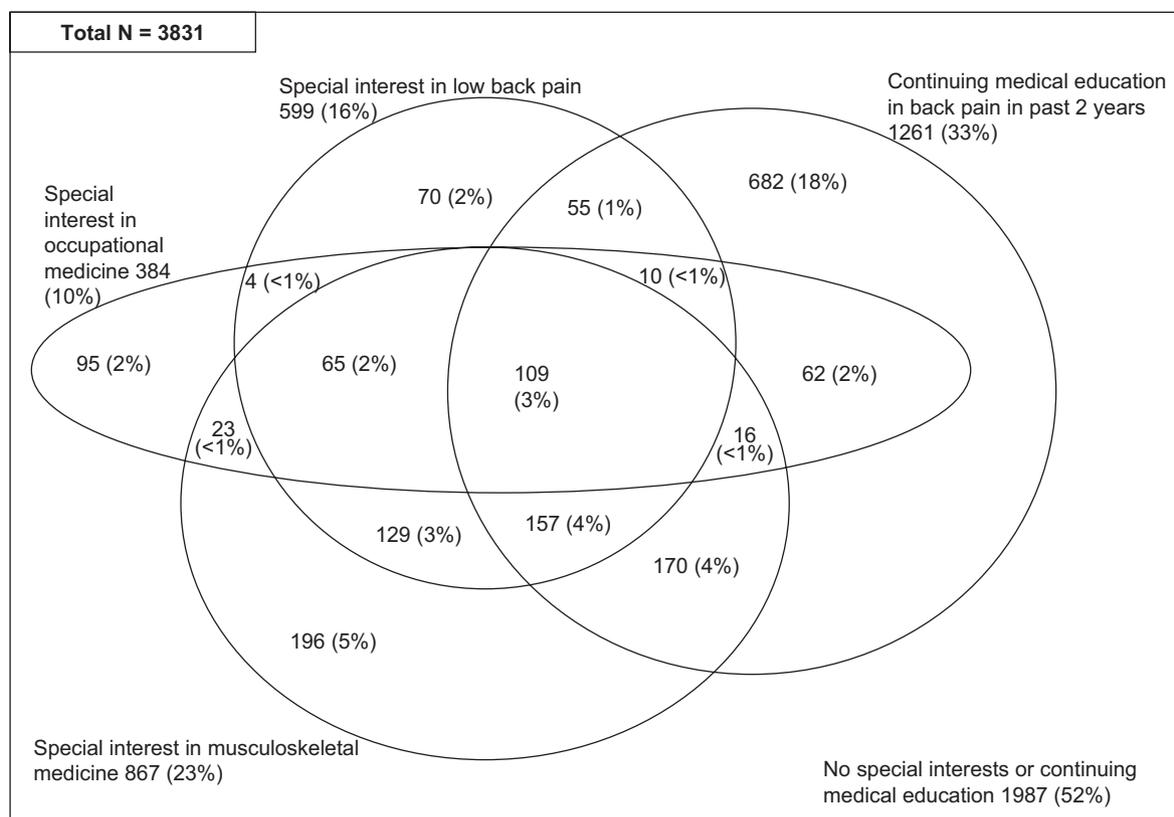


Figure 1. Venn diagram displaying number (%) of general practitioners reporting various special interests or continued medical education about back pain in the past 2 years.

Likert scale that varied from strongly agree to strongly disagree.

Demographic details and practice characteristics were also collected. Respondents were asked to indicate whether they had special interests in LBP, musculoskeletal medicine and/or occupational medicine. They were also asked whether they had attended CME or postgraduate training on back pain management in the last 2 years.

Statistical Analysis

As described previously, data from the 3 waves of practitioner surveys were analyzed using standard methods for independent survey data.^{18,19} For this analysis, we combined data from both states and all 3 waves of surveys. For questions on knowledge, the “correct” responses were based on the most recent systematic reviews of the evidence.^{22–26} The percentage of respondents who answered knowledge questions correctly were determined by adding those who answered either “agree” and “strongly agree” or “disagree” and “strongly disagree” depending on the wording of the question. A response of “uncertain” was coded as being incorrect. For questions concerning attitudes and guidelines, a “positive” response was considered to be appropriate and percentage of appropriate responses was determined in the same way.

The back pain beliefs of different subsets of general practitioners (special interests *vs.* no special interests and CME *vs.* no CME) were compared using relative risks (RRs) adjusted for the design variables of state and survey. These were adjusted for in the analysis to account for possible confounding from having collected the data from 2 different states and at 3 different time points. A RR >1 indicates that a higher percentage of general practitioners with a special interest or recent CME

agree with the back pain management statement compared with those without a special interest or recent CME, an RR <1 indicates that a lower percentage of general practitioners with a special interest or recent CME agree, while an RR = 1 indicates that there is no difference in belief between general practitioners with or without a special interest or CME. The RRs were estimated using a Poisson regression model with a robust error variance.²⁷ To account for possible confounding from multiple special interests and the likelihood of having undertaken CME in the past 2 years, we then repeated the RR modeling including all special interests and CME in the model. To assess the effects of other variables that might influence back pain management beliefs, we also repeated the analyses including adjustments for year of graduation, gender, number of LBP patients seen per week, and number of physicians in the practice. These latter analyses have not been presented as they did not change the results substantively.

Results

Data were available for 3831 general practitioners (overall response rate 38.2%). The characteristics of the participants are shown in Table 1. One thousand one hundred sixty-two (30%) respondents reported at least 1 special interest (Figure 1) and 1261 (33%) reported having had CME for back pain in the previous 2 years. There was some overlap between these groups, *e.g.*, 109 (3%) respondents reported a special interest in all 3 areas and recent CME (Figure 1).

Physicians with special interests or CME in the previous 2 years were more likely to be male, have graduated

Table 2. Percentages of Doctors Agreeing With Knowledge, Attitudes, and Guidelines Statements for General Practitioners With and Without a Special Interest in Low Back Pain (SILBP), RRs Adjusted for State and Survey, and Adjusted for State, Survey and CME and Other Special Interest Groups

	% Agreement		SILBP vs. No SILBP Adjusted for State and Survey		SILBP vs. No SILBP Adjusted for State, Survey and Special Interest Groups	
	With SILBP	Without SILBP	RR*	(95% CI)	RR*	(95% CI)
Knowledge						
Patients with acute LBP should be prescribed complete bed rest until the pain goes away	17.8	9.2	1.89	(1.53–2.33)	2.18	(1.62–2.93)
Patients should not return to work until they are almost pain free	24.5	15.8	1.55	(1.31–1.83)	1.79	(1.43–2.22)
X-rays of the lumbar spine are useful in the work up of patients with acute LBP	40.8	29.1	1.36	(1.21–1.52)	1.26	(1.08–1.47)
Encouragement of physical activity is important in the recovery of LBP	95.7	97.2	0.99	(0.97–1.00)	0.98	(0.96–1.01)
Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP	26.6	32.2	0.82	(0.71–0.95)	0.83	(0.70–0.99)
Attitudes						
I am likely to order X-rays for LBP because patients so often expect me to do so	24.3	22.9	1.04	(0.88–1.22)	1.19	(0.97–1.45)
There is nothing physically wrong with many patients with chronic back pain	25.6	23.0	1.09	(0.93–1.28)	1.07	(0.88–1.31)
Well motivated patients are unlikely to have long term problems with LBP	73.3	65.7	1.13	(1.07–1.20)	1.03	(0.96–1.11)
I have no difficulty in assessing the motivation of my LBP patients	58.1	32.2	1.82	(1.67–1.99)	1.43	(1.27–1.62)
Guidelines						
Practice guidelines are useful to help doctors in the management of medical conditions	79.1	80.3	0.98	(0.88–0.99)	0.97	(0.92–1.03)
They would find practice guidelines helpful in the management of LBP	72.2	77.3	0.93	(0.88–0.99)	0.95	(0.89–1.02)

*Relative risk (RR) of 1 indicates no difference between general practitioners with or without a special interest in low back pain (SILBP); RR > 1 indicates general practitioners with a SILBP more likely to agree, RR < 1 indicates general practitioners with SILBP less likely to agree.

from medical school earlier, less likely to have done a postgraduate family medicine program, and more likely to be in solo practice (Table 1). They were also more likely than those without a special interest or recent CME to see a greater number of patients with back pain per week. Those who had received CME in the previous 2 years were more likely to report special interest in all 3 areas and a special interest in any area was associated with being more likely to report other special interests and recent CME. Physicians with a special interest in occupational medicine had a higher proportion of patients with back pain who were on workers' compensation than those without a special interest (mean percentage [SD]: 46.5 [29.3] vs. 29.8 [25.1], $P < 0.005$).

Physicians with a special interest in LBP were more likely than those without a special interest in LBP to believe that patients with acute LBP should be prescribed complete bed rest until the pain goes away (17.8% vs. 9.2%; RR: 1.89 [95% CI: 1.53 to 2.33]) (Table 2). The disparity between those with and without a special interest in LBP was still evident after adjusting for the presence of other special interests and recent CME (RR: 2.18 [95% CI: 1.62–2.93]). Similarly, physicians with a special interest in LBP were also more likely to believe that patients with low back pain should not return to work

until they are almost pain free (24.5% vs. 15.8%; RR: 1.55 [95% CI: 1.31–1.83]; adjusted RR: 1.79 [95% CI: 1.43–2.22]), and that lumbar spine radiographs are useful in the work up of acute LBP (RR: 1.36 [95% CI: 1.21–1.52]; adjusted RR: 1.26 [95% CI: 1.08–1.47]).

Physicians with a special interest in LBP were less likely to agree that interventions by physicians and other health care providers have very little positive impact on the natural history of acute LBP (26.6% vs. 32.3%; RR: 0.82 [95% CI: 0.71–0.95]; adjusted RR: 0.83 [95% CI: 0.70 to 0.99]). They were also marginally less likely to agree that practice guidelines are useful to help physicians in the management of medical conditions and that they would find practice guidelines helpful in the management of LBP although neither remained significant after adjusting for other special interests and CME (Table 2).

General practitioners with a special interest in musculoskeletal medicine also held more erroneous beliefs about the management of LBP compared with those without a special interest in musculoskeletal medicine (Table 3). However, after adjusting for other special interests and CME, knowledge about back pain management between those with and without a special interest in musculoskeletal medicine was comparable. Only agreement with lumbar spine radiographs being

Table 3. Percentages of Doctors Agreeing With Knowledge, Attitudes, and Guidelines Statements for General Practitioners With and Without a Special Interest in Musculoskeletal Medicine (SIMSK), Relative Risks (RR) Adjusted for State and Survey, and Adjusted for State, Survey and CME and Other Special Interest Groups

	% Agreement		SIMSK vs. No SIMSK Adjusted for State and Survey		SIMSK vs. No SIMSK Adjusted for State, Survey and Special Interest Groups	
	With SIMSK	Without SIMSK	RR*	(95% CI)	RR*	(95% CI)
Knowledge						
Patients with acute LBP should be prescribed complete bed rest until the pain goes away	13.7	9.6	1.34	(1.09–1.66)	1.01	(0.76–1.35)
Patients should not return to work until they are almost pain free	19.6	16.5	1.18	(1.00–1.39)	0.97	(0.78–1.20)
X-rays of the lumbar spine are useful in the work up of patients with acute LBP	37.8	28.9	1.27	(1.14–1.41)	1.16	(1.01–1.33)
Encouragement of physical activity is important in the recovery of LBP	96.7	97.1	1.00	(0.98–1.01)	1.01	(0.99–1.02)
Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP	29.0	32.0	0.88	(0.78–0.99)	0.92	(0.80–1.06)
Attitudes						
I am likely to order X-rays for LBP because patients so often expect me to do so	22.4	23.4	0.95	(0.82–1.09)	0.95	(0.79–1.13)
There is nothing physically wrong with many patients with chronic back pain	25.2	22.8	1.09	(0.94–1.25)	1.08	(0.91–1.28)
Well motivated patients are unlikely to have long term problems with LBP	74.3	64.7	1.16	(1.10–1.22)	1.12	(1.06–1.19)
I have no difficulty in assessing the motivation of my LBP patients	52.7	31.3	1.68	(1.54–1.83)	1.35	(1.20–1.51)
Guidelines						
Practice guidelines are useful to help doctors in the management of medical conditions	79.9	80.2	1.00	(0.96–1.04)	1.00	(0.96–1.05)
They would find practice guidelines helpful in the management of LBP	73.0	77.6	0.94	(0.90–0.99)	0.96	(0.91–1.02)

*Relative risk (RR) of 1 indicates no difference between general practitioners with or without a special interest in musculoskeletal medicine (SIMSK); RR >1 indicates general practitioners with a SIMSK more likely to agree, RR <1 indicates general practitioners with a SIMSK less likely to agree.

useful in the work up of acute LBP remained significantly different. Physicians with a special interest in musculoskeletal medicine were less likely than those without a special interest in musculoskeletal medicine to agree that interventions by physicians and other health care providers have very little positive impact on the natural history of acute LBP, but this became nonsignificant after adjusting for the presence of other special interests and CME.

Physicians with a special interest in occupational medicine appeared to hold similar beliefs about the management of LBP to those without a special interest (Table 4). However, after adjusting for other special interests and recent CME, those with a special interest were less likely to agree that patients with acute LBP should be prescribed complete bed rest until the pain goes away (RR: 0.69 [95% CI: 0.50–0.97]) and less likely to agree that patients should not return to work until they are almost pain-free (RR: 0.69 [95% CI: 0.52–0.90]).

Physicians who reported recent CME about back pain appeared to hold similar beliefs about the management of LBP to those without recent CME (Table 5). However, after adjusting for special interests, those with recent CME were less likely to agree that patients with acute

LBP should be prescribed complete bed rest until the pain goes away (RR: 0.75 [95% CI: 0.60–0.94]), and less likely to agree that lumbar spine radiographs are useful in the work up of acute LBP (RR: 0.85 [95% CI: 0.72–1.01]). Physicians with recent CME were also more likely to agree that interventions by physicians and other health care providers have very little positive impact on the natural history of acute LBP and this remained significant after adjustments for the presence of special interests.

Figure 2 presents the adjusted RRs for the questions relating to knowledge for each subgroup comparison visually. This highlights the fact that after adjusting for the effect of other special interests and CME, physicians with a special interest in LBP have poorer knowledge about the management of LBP compared with those without a special interest in LBP. On the other hand, after adjusting for other special interests and CME, those with a special interest in musculoskeletal medicine have similar beliefs to those without a special interest in musculoskeletal medicine, while physicians with a special interest in occupational medicine or recent CME have better beliefs than their counterparts without a special interest in occupational medicine or recent CME, respectively. These results all

Table 4. Percentages of Doctors Agreeing With Knowledge, Attitudes and Guidelines Statements for General Practitioners With and Without a Special Interest in Occupational Medicine (SIOCC), Relative Risks (RR) Adjusted for State and Survey, and Adjusted for State, Survey and CME and Other Special Interest Groups

	% Agreement		SIOCC vs. No SIOCC Adjusted for State and Survey		SIOCC vs. No SIOCC Adjusted for State, Survey and Special Interest Groups	
	With SIOCC	Without SIOCC	RR	(95% CI)	RR*	(95% CI)
Knowledge						
Patients with acute LBP should be prescribed complete bed rest until the pain goes away	10.2	10.6	0.91	(0.66–1.26)	0.69	(0.50–0.97)
Patients should not return to work until they are almost pain free	15.2	17.4	0.83	(0.64–1.08)	0.69	(0.52–0.90)
X-rays of the lumbar spine are useful in the work up of patients with acute LBP	35.6	30.4	1.14	(0.98–1.33)	1.01	(0.86–1.19)
Encouragement of physical activity is important in the recovery of LBP	96.5	97.0	0.99	(0.97–1.02)	1.00	(0.98–1.02)
Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP	30.0	31.5	0.91	(0.77–1.09)	0.96	(0.80–1.15)
Attitudes						
I am likely to order X-rays for LBP because patients so often expect me to do so	17.3	23.8	0.72	(0.57–0.90)	0.70	(0.54–0.89)
There is nothing physically wrong with many patients with chronic back pain	21.1	23.6	0.88	(0.71–1.09)	0.83	(0.67–1.04)
Well motivated patients are unlikely to have long term problems with LBP	71.3	66.3	1.08	(1.01–1.16)	1.01	(0.93–1.09)
I have no difficulty in assessing the motivation of my LBP patients	49.5	34.7	1.40	(1.24–1.57)	1.05	(0.93–1.19)
Guidelines						
Practice guidelines are useful to help doctors in the management of medical conditions	80.7	80.0	1.01	(0.96–1.07)	1.02	(0.96–1.08)
They would find practice guidelines helpful in the management of LBP	75.5	76.6	0.99	(0.93–1.05)	1.03	(0.96–1.09)

*RR of 1 indicates no difference between general practitioners with or without a special interest in occupational medicine (SIOCC); RR >1 indicates general practitioners with a SIOCC more likely to agree, RR <1 indicates general practitioners with a SIOCC less likely to agree.

consistently suggest that poorer back pain beliefs are mediated by a special interest in LBP.

All physicians with at least 1 special interest or recent CME were more likely than those without special interests or recent CME to agree that well motivated patients were unlikely to have long-term problems with LBP (Tables 2–5). This remained significant after adjusting for other special interests and CME only for physicians with a special interest in MSK medicine and physicians with recent CME. There were no important differences in relation to beliefs about guidelines between those with and without special interests in occupational medicine, musculoskeletal medicine, or recent CME.

■ Discussion

A self-reported special interest in LBP among general practitioners participating in this study was associated with back pain management beliefs that are contrary to the best available evidence. Similarly, while we also observed poorer beliefs in those who reported a special interest in musculoskeletal medicine, after adjusting for special interests and CME, there were no differences between those with and without a special interest in musculoskeletal medicine. Furthermore, after adjusting for CME and/or other special interests, physicians with a

special interest in occupational medicine and physicians who had recently participated in CME about back pain had significantly better back pain management beliefs. Taken together, these results provide strong evidence that poorer beliefs about management of back pain is driven by a special interest in LBP. These findings raise serious concerns about how back pain is currently being managed among general practitioners with a special interest in LBP.

While our study determined the stated beliefs of general practitioners regarding optimal management of back pain rather than their actual behavior, many studies have demonstrated that physicians' beliefs do influence treatment decisions^{17,28,29} and also influence patient beliefs.³⁰ The participants all answered a standard questionnaire regarding their knowledge and attitudes about the treatment of LBP, and therefore any over- or underestimation of behavior is likely to be consistent across groups.

Back pain is the most common musculoskeletal reason for visiting the general practitioner.³¹ Those who seek care usually have more disabling LBP and fear that the pain could impair life or capacity for work,³² both risk factors for chronicity. It is therefore imperative that general practitioners have a high level of expertise in managing this problem. Our data suggest that those who

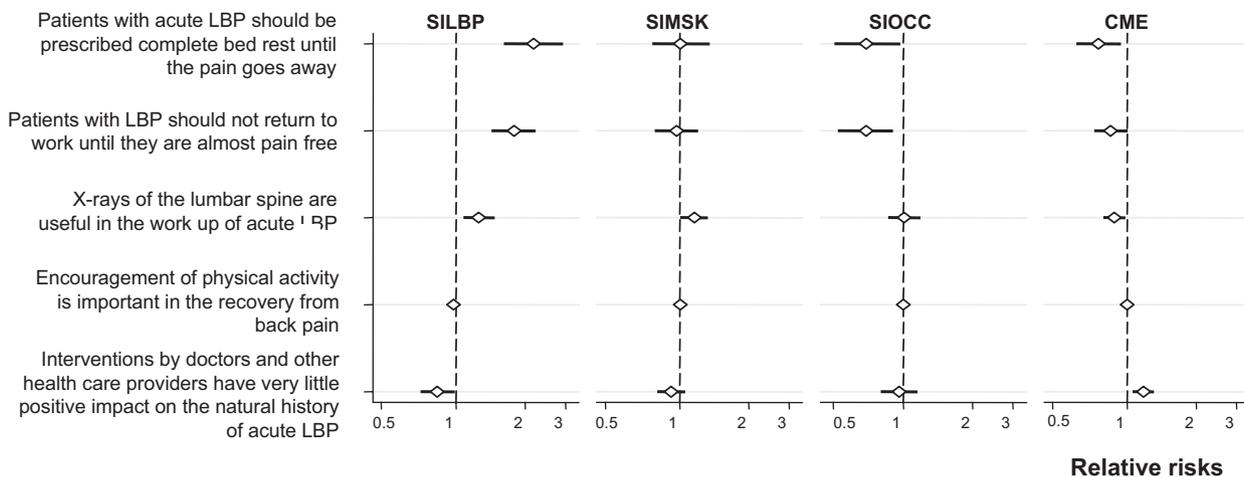
Table 5. Percentages of Doctors Agreeing With Knowledge, Attitudes and Guidelines Statements for General Practitioners With and Without CME in the Past 2 year, Relative Risks (RR) Adjusted for State and Survey, and Adjusted for State, Survey and Special Interest Groups

	% Agreement		CME vs. No CME Adjusted for State and Survey		CME vs. No CME Adjusted for State, Survey and Special Interest Groups	
	With CME	Without CME	RR*	(95% CI)	RR*	(95% CI)
Knowledge						
Patients with acute LBP should be prescribed complete bed rest until the pain goes away	9.2	11.5	0.84	(0.68–1.04)	0.75	(0.60–0.94)
Patients should not return to work until they are almost pain free	15.9	17.8	0.91	(0.78–1.07)	0.85	(0.72–1.01)
X-rays of the lumbar spine are useful in the work up of patients with acute LBP	29.7	31.6	0.94	(0.85–1.05)	0.88	(0.79–0.98)
Encouragement of physical activity is important in the recovery of LBP	96.8	97.0	1.00	(0.98–1.01)	1.00	(0.99–1.01)
Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP	33.9	30.0	1.13	(1.02–1.25)	1.18	(1.06–1.31)
Attitudes						
I am likely to order X-rays for LBP because patients so often expect me to do so	21.5	24.1	0.91	(0.80–1.04)	0.92	(0.81–1.05)
There is nothing physically wrong with many patients with chronic back pain	24.4	22.9	1.06	(0.93–1.20)	1.04	(0.92–1.19)
Well motivated patients are unlikely to have long term problems with LBP	70.9	64.7	1.09	(1.04–1.14)	1.06	(1.01–1.11)
I have no difficulty in assessing the motivation of my LBP patients	42.9	32.8	1.31	(1.20–1.43)	1.14	(1.05–1.25)
Guidelines						
Practice guidelines are useful to help doctors in the management of medical conditions	81.9	79.3	1.02	(0.99–1.06)	1.02	(0.99–1.06)
They would find practice guidelines helpful in the management of LBP	75.9	76.9	0.98	(0.95–1.02)	1.00	(0.96–1.04)

*RR of 1 indicates no difference between general practitioners with or without CME in back pain in the past 2 year; RR >1 indicates general practitioners with CME more likely to agree, RR <1 indicates general practitioners with CME less likely to agree.

seek medical care, particularly those who have more severe symptoms or concerns, may be more likely to seek care from a general practitioner who claims special expertise or interest in back pain. This is supported by the

findings of a recent Australian survey of different primary care clinicians treating back pain which found that there was a higher caseload of LBP patients among a random sample of physicians identified from the mem-



SILBP - Special interest in low back pain, SIMSK – special interest in musculoskeletal medicine, SIOCC – special interest in occupational medicine, CME – continuing medical education about back pain in the past two years

*Relative risk (RR) = 1 indicates no difference between those with and without a special interest or CME; RR > 1 indicates those with a special interest or CME more likely to agree compared to those without a special interest or CME respectively, RR < 1 indicates those with a special interest or CME less likely to agree compared to those without a special interest or CME respectively.

Figure 2. Relative risks* for agreement with knowledge questions, adjusted for state, survey, other special interests, and CME.

bership list of the Australian Association of Musculoskeletal Medicine than among a random sample of physicians identified from the Royal Australian College of General Practitioners (RACGP).³³ Yet our study suggests, contrary to what might be expected, that this may not be in the patient's best interests.

Our study found some evidence that provision of continuing medical education about back pain is beneficial and results in more evidence-based beliefs. We found better beliefs among physicians who had received CME after adjusting for special interests and we also found that removing the effect of CME in those with a special interest in LBP had the effect of accentuating the differences between those with and without a special interest in LBP. Unfortunately, we did not collect data which would allow characterization of what CME and postgraduate education was received. It is possible that some education was not in line with the best available evidence although we are not aware of any studies, either in our setting or elsewhere that have reviewed and compared the content of different CME and postgraduate education courses for back pain.

We found that differences in beliefs among those with a special interest in LBP were consistent between states and over time (results not shown) implying that beliefs among the subgroup of Victorian general practitioners with a special interest in LBP were not differentially influenced by the mass media campaign. This contrasts sharply with the significant shift toward more favorable beliefs arising as a result of the campaign that were observed among general practitioners overall and among the general population.^{18,19,34–36} The seeming inability to influence the beliefs of physicians with special interests in back pain raises the possibility that these beliefs may be recalcitrant to change. Reasons for this might include vested financial and/or professional interests.

A previous mailed survey of orthopedic spine surgeons and family physicians found that physicians' recommendations for activity and work to patients with chronic back pain varied widely, and recommendations reflected the personal attitudes of the physicians as well as factors related to the patients' clinical features.³⁷ Eighty-five percent of orthopedic spine surgeons and 42% of family physicians reported a moderate or strong interest in back pain but, in contrast to our study, this was not found to influence physician recommendations for more or less restrictive advice about level of activities and work. Ninety-five percent of orthopedic surgeons and 37% of family physicians reported some type of back pain training (fellowship, CME courses and/or independent study), and in contrast to our findings, this was not found to influence physician recommendations.

There have been many published randomized controlled trials to test interventions designed to change the behavior of general practitioners in their management of LBP.^{38–45} Interventions have included educational out-

reach, multifaceted interventions including workshops and printed educational material, dissemination and audit, and feedback and report varying degrees of success. While some trials have considered the influence of various patient factors on general practitioner management of back pain, the majority has not assessed physician factors and none have assessed the influence of physician special interests in back pain.

A previous study found that health care provider's fear-avoidance beliefs influenced their treatment of back pain—those with high levels of fear-avoidance beliefs were more likely to believe that sick leave is good treatment and were less likely to provide good information about activities.¹⁷ Our study suggests that special interests may be another important barrier to uptake of guidelines and behavior change toward evidence-based care and may be 1 explanation for the partial failure of guideline implementation strategies previously.

In conclusion, we found that having a special interest in back pain was associated with back pain management beliefs that are contrary to the best available evidence. Unlike the rest of the population, these beliefs were not modified by a mass media campaign specifically designed to educate the public about the best way to manage non-specific acute LBP. Future research should be directed towards determining whether these beliefs are amenable to change. These findings also need to be considered when designing and evaluating interventions that aim to change the behavior of general practitioners in their management of LBP. Scrutiny of postgraduate education courses about back pain may also be needed to ensure that the content is in line with the best available evidence.

■ Key Points

- A special interest in LBP among general practitioners participating in this study was associated with back pain management beliefs contrary to the best available evidence.
- A special interest in musculoskeletal medicine was also associated with poorer management beliefs but, after adjusting for other special interests and CME, there were no differences between those with and without a special interest in musculoskeletal medicine.
- Physicians with a special interest in occupational medicine and physicians with recent CME about back pain had significantly better back pain management beliefs.
- These findings raise serious concerns about how back pain is currently being managed among general practitioners with a special interest in LBP.

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