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ORIGINAL ARTICLE

Healthcare provider back pain beliefs unaffected by a media campaign

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Abstract

Objective. Healthcare providers play a key role in transmitting knowledge and beliefs about LBP to their patients. There are differences in back pain beliefs between the various professional groups treating LBP patients. This study examined whether LBP beliefs changed among the healthcare providers exposed to a media campaign. **Design.** A quasi-experimental postal before-and-after survey of health professional beliefs following a campaign aimed at improving beliefs about LBP in the general public, and which included specific interventions also towards the healthcare providers. **Setting.** Two Norwegian counties, with a neighbouring county serving as control. **Subjects.** A total of 243 doctors, physiotherapists, and chiropractors in primary care. **Main outcome measures.** Beliefs about LBP before and after exposure to the campaign. **Results.** A total of 243 doctors, physiotherapists, and chiropractors answered the questionnaire in 2002 and 2005. A general tendency was observed for all providers to have beliefs more in line with guidelines in 2005 compared with 2002, irrespective of exposure status. Some baseline differences in beliefs between the professional groups were not only sustained but in fact seemed to increase from 2002 to 2005. This was particularly as regards LBP as a self-limiting condition. **Conclusion.** An LBP mass media campaign with educational initiatives aimed at healthcare providers did not result in important improvement in LBP beliefs of providers exposed to the campaign. Important differences were observed between beliefs of the different healthcare provider groups in their view of LBP.

Key Words: Beliefs, family practice, healthcare providers, low back pain, media campaign

Low back pain (LBP) is a common healthcare problem. Despite the fact that most episodes of acute LBP spontaneously recover within a few weeks [1], many people with LBP seek care from a health professional. This results in a tremendous burden for health systems as well as high economic costs. People's attitudes towards LBP appear to influence health-seeking behaviour [2]. Negative attitudes have also been demonstrated to increase the risk of delayed recovery from the condition [3].

Due to the high number of individuals seeking care for LBP, health professionals' attitudes are also of interest. A Norwegian study found that patients with LBP share attitudes and perceptions towards back pain with their preferred healthcare provider [4]. While guidelines for the management of acute LBP support the provision of optimistic, self-coping advice [1,5], attitudes and beliefs of some providers

Health professionals play an important role in transmitting LBP beliefs to their patients.

- In this study a LBP mass media campaign with educational initiatives aimed at healthcare providers did not result in important improvement in LBP beliefs of providers exposed to the campaign.
- Important differences were observed between beliefs of the different healthcare provider groups in their view of LBP, with doctors most in line with the guidelines and physiotherapists more than chiropractors.

seem to be more negative and potentially fear-avoidant [4,6]. Several attempts to alter clinicians' views towards those presented in guidelines have

been made with varying degree of success, and barriers towards this have been examined [7–11].

In an attempt to alter societal and health professional attitudes and beliefs about back pain, a mass media campaign was conducted in two Norwegian counties in 2002–2005 [12]. The campaign aimed to deliver guideline-based optimistic advice to stay active through an episode of LBP, and information that early return to work was beneficial while imaging and surgery most often would be without benefit. Small but significant changes in back pain beliefs of the general population exposed to the media campaign have been reported [12]. In addition to the media campaign, an educational initiative was directed towards healthcare providers in the area.

Previous research has identified small but important differences in back pain beliefs between the various professionals groups treating LBP patients in the campaign region [4]. This study examined whether LBP beliefs changed among the healthcare providers exposed to the campaign.

Material and methods

In 2002 the Norwegian Back Pain Network launched multidisciplinary guidelines for the management of acute back pain. These guidelines formed the basis for a mass media campaign “*Active Back*” that ran in two Norwegian counties from 2002 to 2005 [12]. The media campaign was based largely on written educational materials sent to all households in the area, as well as local TV and radio advertisements, cinema commercials, and posters at all health clinics. A specific website provided information on the campaign and general advice on LBP was promoted by the advertisements. Health professionals were exposed to the mass media campaign as members of their communities; however, as part of the project the guidelines and written information about the campaign were also delivered to all doctors, physiotherapists, and chiropractors in the intervention counties.

Details of the campaign have been described in detail elsewhere [12], but the key messages can be summarized in five statements of which one or several were repeated on every advertisement:

- X-ray rarely shows the reason for back pain.
- Work with your back! – One recovers faster if one returns to work as soon as possible, even if the back is still hurting.
- Back pain is rarely caused by any dangerous illness.
- A back in motion improves faster.
- Only a few people with back pain need surgery.

The educational initiative was aimed at the three primary healthcare groups: doctors, physiotherapists, and chiropractors. It consisted of written material mailed to clinics, and provision of posters and patient handouts to be distributed at the clinics. All health professionals were invited to one full-day multidisciplinary course on the management of LBP but less than 100 providers attended. The written material was in addition to a short and a full version of evidence-based guidelines that had been mailed previously. Information on the campaign and overall project were also provided. The project was approved and planned in conjunction with national and local unions of the three health professional groups.

Study design

We conducted a quasi-experimental before-and-after survey of health professional beliefs. Questionnaires were mailed to all primary care physicians, physical therapists, and chiropractors working in the two counties in which the campaign ran. We also surveyed providers in an unexposed neighbouring county as a comparison group. Excluded were providers reporting that their practice did not involve primary care or who were retired. Non-responders received one written reminder.

Baseline beliefs were measured in 2002 prior to the campaign launch, and after the campaign had been conducted (2004 and 2005). As no statistically significant or clinically relevant differences in results were observed between 2004 and 2005, we will not present 2004 results in this paper.

Study material

Demographic information was obtained from survey respondents including age, gender, years in practice, type of practice, and eventual professional speciality. The health professionals were asked about their interest in patients with LBP, approximately how many patients with the condition they see in their practice weekly, their use of diagnostic imaging, and to what extent they refer patients with unspecific LBP and sciatica to other care providers. We also asked respondents whether they had seen any of the campaign advertisements or written material. Additionally, respondents completed an LBP beliefs questionnaire, which had been developed specifically for this study.

In the LBP questionnaire, all respondents were asked to rate their level of agreement with five statements based on the main messages of the media

campaign and Norwegian guidelines for acute back, which included:

1. Back pain recovers best by itself.
2. In most cases, back pain recovers by itself in a couple of weeks, no matter what we do.
3. Most often, it will be possible to find an exact cause of the pain.
4. One recovers faster from back pain if one continues at work, or returns as soon as possible.
5. Any treatment by a doctor, physiotherapist, or chiropractor is merely symptomatic pain relieving

Two additional items were included based on Deyo's seven myths about back pain [13]:

6. Disc herniation most often should have surgery.
7. Radiograph and newer imaging tests are useful to identify the cause of pain.

All survey item responses were recorded on a five-point Likert scale. For purposes of determining whether provider beliefs were in harmony with the evidence-based messages of the campaign, item responses were categorized into disagree (totally disagree and disagree), unsure (neither disagree nor agree), or agree (agree and totally agree). We were therefore able to calculate the percentage of responses in harmony with the project key messaging.

Statistics

Descriptive statistics were calculated to describe the sample of health providers. Percentages of providers agreeing with campaign messages were calculated. To determine changes in provider beliefs from baseline to after the campaign, proportional odds regression models (logistic models) for repeated measures were fitted using Proc GLIMMIX in SAS, Version 9.0 (SAS Institute Inc., NC, USA). In these models the changes in beliefs for the different outcome variables were measured on a three-level ordinal scale (1=disagree, 2=unsure, and 3=agree). Independent variables in these models were time (1/2), county intervention/control), profession (doctors, physiotherapists, and chiropractors), and all the second- and third-order interactions. Significance testing was also conducted to determine differences between those reporting exposure to the campaign and those who did not report seeing the campaign.

SPSS 14.0 for Windows was used for the descriptive analyses and an alpha level of 0.05 was chosen to judge statistical significance.

Results

The questionnaire was sent to 1105 healthcare providers in 2002, and to 875 in 2005. There were 131 in 2002 and 58 providers in 2005 who returned the questionnaire as irrelevant because of a practice limited to specific groups of patients (e.g. children, rehabilitation of the elderly, administration) or retirement. The questionnaire was also sent to providers in 2004, which resulted in an additional 99 irrelevant returns that were excluded from the 2005 survey. Providers completing the questionnaire (in 2002 and 2005 respectively) included 193 and 235 doctors (48% and 56%), 255 and 206 physiotherapists (47% and 57%), and 21 and 25 chiropractors (75% and 78%). Of these providers only the 243 that answered both in 2002 and in 2005 were included in analysis. The final analysis thus consists of 85 doctors, 83 physiotherapists, and 11 chiropractors from the two intervention counties, and 31 doctors, 28 physiotherapists, and 5 chiropractors from the control county. This is 25% of the maximal potential of 974 responders in 2002. Among physiotherapists, a larger proportion of men answered both times in both the intervention and control groups. Otherwise there were no differences in the characteristics between responders completing both surveys and those not. The observed differences between the professional groups in terms of age and gender were not statistically significant (Table I).

At baseline, 38% of medical doctors in the intervention group reported that they had great interest in patients with LBP while 45% reported great interest in the control group. Among physiotherapists, 54% reported great interest in the intervention group and 39% in the control. Among chiropractors, 91% reported great interest in the intervention group and 100% in the control. The differences in level of interest in LBP between intervention counties and control are not statistically significant. Chiropractors clearly had the highest proportion of LBP patients in their clinics (see Table I). At baseline the reported proportion of chiropractors' patients per week with LBP was 84%, while this proportion was 29% for physiotherapists and 10% for medical doctors.

Campaign exposure

Within the intervention counties, exposure to the campaign was high among all professional groups. In the intervention counties, 98% of medical doctors, 99% of physiotherapists, and 100% of the chiropractors answered in 2005 that they had noticed the campaign. Within the control group, 36% of medical doctors, 46% of physiotherapists,

Table I. Gender and age of responders, and self-reported average number of patients treated per week for all reasons and for LBP complaints by the responders (mean, SD, CI).

	Intervention counties			Control county		
	Doctors (n = 85)	Physiotherapists (n = 82)	Chiropractors (n = 11)	Doctors (n = 30)	Physiotherapists (n = 26)	Chiropractors (n = 5)
Gender (% men)	77	56	73	73	54	60
Age <34 years (%)	20	33	71	29	23	75
35–54 years (%)	58	53	14	47	59	25
> 55 years (%)	22	14	14	23	18	0
Total no. of patients per week 2002	82.1 (31) (75–89)	53.6 (20) (49–58)	108.6 (39) (83–135)	71.0 (33) (58–84)	47.4 (21) (28–56)	106.0 (21) (80–132)
Total no. of patients per week 2005	86.7 (40) (78–95)	61.2 (45) (51–71)	100.9 (49) (68–134)	68.3 (30) (57–80)	52.6 (27) (42–63)	84.0 (32) (44–124)
No. of LBP patients per week 2002	7.7 (4) (7–9)	15.3 (13) (12–18)	87.7 (44) (58–117)	7.8 (5) (6–10)	14.5 (14) (9–21)	97.0 (23) (69–125)
No. of LBP patients per week 2005	8.6 (5) (7–10)	16.6 (16) (13–20)	79.1 (49) (46–112)	8.1 (5) (6–10)	16.5 (13) (11–22)	69.0 (21) (43–95)

and 60% of the chiropractors also confirmed an awareness of an LBP campaign.

Provider beliefs

Overall, we observed a general tendency for all providers to have beliefs more in line with guidelines in 2005 compared with 2002 (Table II). This was irrespective of exposure status. Although it seems that beliefs of providers in the intervention group improved following the campaign slightly more than in those in the control county, the proportional odds regression model for repeated observations reveals that there was no statistically significant improvement on any item in the intervention group as compared with the control county.

Beliefs of all groups seemed to become more in line with the guidelines on survey items regarding imaging, surgery, and return to work. Doctors and chiropractors also seemed to increase their level agreement with the statement “Most often it will be possible to find an exact cause of the pain”. In general, doctors seemed to be more in line with the guidelines than the other two groups on this statement.

Between provider groups, there are differences in opinion on the likelihood of potential spontaneous recovery from LBP, particularly between medical doctors and chiropractors (Tables II and III). This changed minimally over the campaign period. Additionally, the importance and need for specific treatment is regarded quite differently between medical doctors and chiropractors, while physiotherapist responses were in between. The difference in opinions on specific treatment between the professional groups appeared to increase somewhat between 2002 and 2005, with similar findings between the intervention and control groups. Altogether there was a significant difference between the provider groups on four of the seven statements showing doctors to be most in line with the guidelines and physiotherapists more than chiropractors (Table III).

A sub-analysis showed no differences in beliefs between the 98 doctors who were specialists in family medicine and other doctors, in either the intervention or the control groups. Similarly no statistically significant differences were seen between the 13 physiotherapists reporting additional education as manual therapists compared with the other responding physiotherapists.

Discussion

An LBP mass media campaign with educational initiatives aimed at healthcare providers achieved

Table II. Beliefs about LBP among healthcare professionals: Proportion (%) of respondents responding appropriately according to campaign statements, in the control and project counties in 2002 and 2005.

Statement	Agree/disagree	Profession	Intervention counties		Control county	
			2002	2005	2002	2005
Back pain recovers best by itself	Agree/totally agree	Doctors	74	86	84	84
		Physiotherapists	28	41	46	46
		Chiropractors	0	0	0	0
Radiograph and newer imaging tests are useful to identify the cause of the pain	Disagree/totally disagree	Doctors	10	31	7	13
		Physiotherapists	16	33	7	11
		Chiropractors	30	40	0	0
In most cases, back pain recovers by itself in a couple of weeks, no matter what we do	Agree/totally agree	Doctors	88	89	94	90
		Physiotherapists	56	60	54	54
		Chiropractors	0	9	20	0
Most often, it will be possible to find an exact cause of the pain	Disagree/totally disagree	Doctors	47	55	45	61
		Physiotherapists	29	34	25	32
		Chiropractors	18	46	20	40
One recovers faster from back pain if one continues at work or returns as soon as possible	Agree/totally agree	Doctors	73	78	87	77
		Physiotherapists	60	62	64	68
		Chiropractors	64	73	60	40
Any treatment by a doctor, physiotherapist, or chiropractor is symptomatic pain relieving	Agree/totally agree	Doctors	52	65	61	77
		Physiotherapists	20	16	39	21
		Chiropractors	9	0	0	0
Disc herniation should most often have surgery	Disagree/totally disagree	Doctors	69	80	80	93
		Physiotherapists	57	79	68	75
		Chiropractors	100	91	100	80

nearly 100% exposure among providers in the intervention group, but did not result in any statistically detectable differences in LBP beliefs between exposed and unexposed providers. Overall, we observed a general tendency for all providers irrespective of exposure status to have beliefs more in line with guidelines in 2005 compared with 2002. We also observed some baseline differences in beliefs between the professional groups, which were not only sustained but in fact seemed to increase from 2002 to 2005. For example, medical doctors tended to agree with the statement “Back pain recovers best by itself”, while none of the chiropractors agreed with this statement at any follow-up point.

The lack of improvement in beliefs among healthcare providers following exposure to a mass media campaign is somewhat in contrast to findings from a previous Australian study. The Australian campaign not only found significant improvements in physicians’ beliefs about back pain [14], but sustained effects several years after campaign cessation have recently been reported [15,16]. The Norwegian campaign was different from the Australian as it was conducted at a much lower cost and scale, which could be part of the explanation for the lack of effect seen. In this study we achieved close to 100% campaign awareness in the intervention counties, which is comparable to the 89% reported in Australia [14], but only 42% in the control county. Ongoing evaluation of campaigns in other nations

may increase our understanding of whether such public health strategies can be successful within other jurisdictions [17].

Healthcare providers’ beliefs about LBP are an important issue because of the strong connection between provider beliefs and those held by their patients. It is unknown whether this association exists because providers educate their patients, or because patients select providers with beliefs similar to their own [4]. An important aim of the Norwegian campaign was to improve the general public’s knowledge, attitudes, and beliefs about LBP in order to create a better climate for healthcare providers to give care in accordance with evidence-based guidelines. Patients’ expectancies have previously been listed as one of many barriers to professionals’ adherence to guidelines [18,19]. However, even though LBP beliefs appear to have improved in the general public, we did not see decreased LBP-related absence from work following the campaign [12].

The substantial differences observed between medical doctors and chiropractors may potentially create confusion or frustration among patients receiving different advice from the two provider groups. The observed differences could be the result of unequal characteristics of the patients seeking care from a medical doctor or a chiropractor. Chiropractor patients seem to have fewer comorbidities and report fewer limitations in their activities than those who consult medical doctors [20]. Nevertheless, beliefs of medical doctors seem to be more in

Table III. Odds ratios (OR), with 95% confidence intervals (95% CI), and p-values, for the main effects in an adjusted proportional odds logistic regression model for repeated observations, including all second and third order interactions.

Statement			OR (95% CI)	p-value
Back pain recovers best by itself	Profession	Doctors	1 (reference)	
		Physiotherapists	9.82 (4.8–20.08)	<0.001
		Chiropractors	607.1 (121.62–3030.85)	<0.001
	Year	2002	1 (reference)	
		2005	1.11 (0.31–4)	0.869
	County	Intervention	1 (reference)	
	Control	2.36 (1.07–5.23)	0.034	
Radiograph and newer imaging tests are useful to identify the cause of the pain	Profession	Doctors	1 (reference)	
		Physiotherapists	1.01 (0.54–1.87)	0.981
		Chiropractors	1.66 (0.46–5.99)	0.436
	Year	2002	1 (reference)	
		2005	2.21 (0.85–5.74)	0.102
	County	Intervention	1 (reference)	
	Control	1.99 (1–3.94)	0.05	
In most cases, back pain recovers by itself in a couple of weeks, no matter what we do	Profession	Doctors	1 (reference)	
		Physiotherapists	6.58 (3.09–13.99)	<0.001
		Chiropractors	62 (17.24–222.96)	<0.001
	Year	2002	1 (reference)	
		2005	1.02 (0.24–4.38)	0.977
	County	Intervention	1 (reference)	
	Control	1.1 (0.51–2.37)	0.802	
Most often, it will be possible to find an exact cause of the pain	Profession	Doctors	1 (reference)	
		Physiotherapists	0.36 (0.19–0.7)	0.003
		Chiropractors	0.17 (0.05–0.64)	0.009
	Year	2002	1 (reference)	
		2005	1.66 (0.63–4.34)	0.302
	County	Intervention	1 (reference)	
	Control	1.09 (0.53–2.22)	0.819	
One recovers faster from back pain if one continues at work or returns as soon as possible	Profession	Doctors	1 (reference)	
		Physiotherapists	0.91 (0.5–1.65)	0.747
		Chiropractors	2.26 (0.6–8.51)	0.229
	Year	2002	1 (reference)	
		2005	1.39 (0.52–3.71)	0.505
	County	Intervention	1 (reference)	
	Control	0.98 (0.51–1.91)	0.962	
Any treatment by a doctor, physiotherapist, or chiropractor is symptomatic pain relieving	Profession	Doctors	1 (reference)	
		Physiotherapists	4.3 (2.28–8.14)	<0.001
		Chiropractors	28.82 (7.19–115.56)	<0.001
	Year	2002	1 (reference)	
		2005	0.39 (0.13–1.16)	0.089
	County	Intervention	1 (reference)	
	Control	1.59 (0.79–3.21)	0.19	
Disc herniation should most often have surgery ¹	Year	2002	1 (reference)	
		2005	2.01 (1.31–3.09)	0.001
	County	Intervention	1 (reference)	
		Control	0.68 (0.39–1.17)	0.19

¹Data on profession missing due to small number of responses.

line with current guidelines than chiropractors', especially regarding the need for specific treatment in a condition with good prognosis when left untampered with [21].

The large CI intervals reflect the small number of chiropractors responding to the questionnaire at both times, which also represents a limitation of this study. Results should therefore be interpreted with caution. Furthermore, data represent beliefs of only 25% of the healthcare providers in the region

surveyed. Providers responding to study surveys reported a high level of interest and number of patients with LBP treated, possibly indicating that those providers with the greatest interest in the issue participated. Potentially those providers who do not see a high proportion of patients with LBP in their practice did not respond. Despite high face validity of our survey questions (items were created directly from campaign messages), no formal validity testing of the survey was undertaken.

Conclusion

An LBP mass media campaign with educational initiatives aimed at healthcare providers did not result in important improvement in LBP beliefs of providers exposed to the campaign. Beliefs about LBP appeared to improve somewhat in all groups over the duration of the campaign. Important differences were observed between beliefs of the different healthcare provider groups in their view of LBP, with doctors most in line with the guidelines and physiotherapists more than chiropractors. This represents an important avenue for future research.

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