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**Designing an online resource for people with low back pain: healthcare provider  
perspectives**

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## **ABSTRACT**

People with low back pain (LBP) seek education and information from the Internet. Existing LBP websites are often of poor quality, and disparities have been identified between patient and health-care provider evaluations of LBP websites. This study aimed to identify health-care provider perspectives on desirable content for a proposed LBP website and how this information should be presented. It complements an earlier study of LBP patient (consumer) perspectives. A qualitative descriptive study, encompassing focus groups and telephone interviews, was conducted with 42 health-care professionals practising in the LBP field. Four categories of information were identified: explaining LBP; treatment and management options; myth-busting information; and communication with health-care professionals. Presentation preferences included: use of visual media; interactivity; and useability and readability. Comparison with the consumer study identified differences with regard to: depth and breadth of diagnostic and treatment information; provision of lay person experiences and stories; and capacity for consumer-to-consumer interaction online. Views of both consumers and health-care providers are critical when developing an online LBP resource. Failure to address the needs of both stakeholder groups diminishes the potential of the resource to improve consumer outcomes.

### **What is known about the topic?**

It is recognised that the public's use of the Internet for health-related information has advantages and disadvantages and health-care providers and consumer evaluations of low back pain (LBP) websites are disparate.

### **What does this paper add?**

Provider perspectives on desirable content and presentation for a LBP website provide a valuable framework for the development of a website relevant to both health-care providers and those with LBP.

## **INTRODUCTION**

Use of the Internet to obtain health-related information continues to increase worldwide (Fox & Jones, 2009; Kummervold et al., 2008). Research involving people with low back pain (LBP) consistently reports a desire for increased information about the condition (Briggs et al., 2012; Glenton, 2002; Laerum, Indahl, & Skouen, 2006; Nielsen, Jull, & Hodges, 2013). The Internet, with its capacity to provide information in varied formats at a time and place of the user's choosing, seems an obvious avenue to provide such information.

Potential disadvantages of public use of the Internet to obtain health information have been identified (Wald, Dube, & Anthony, 2007). These include the variable quality of online health-related information (Ahmad et al., 2006; Eysenbach & Diepgen, 1998) and the potential for inaccurate information to be misleading or misinterpreted, lead to requests for inappropriate clinical interventions, and/or be used for potentially detrimental self-diagnosis or self-treatment (Ahmad, et al., 2006). In addition, clinicians have expressed concern and frustration at using limited consultation time to clarify misunderstandings and defend diagnoses that conflict with website information (Ahmad, et al., 2006; Sommerhalder et al., 2009; Wald, et al., 2007). The provision of clear, accurate and relevant information on health websites would seem integral to realising the potential of the Internet for health education.

Research evaluating LBP websites rate the overall quality as poor from the clinician perspective (Butler & Foster, 2003; Hendrick et al., 2012; Li et al., 2001). People with LBP have also reported difficulty locating desired information about their condition on the Internet as they struggle to judge the quality and veracity of the volume of information available (Nielsen, et al., 2013). Findings from an earlier study on the information needs of people with LBP and their preferred methods for presentation of this information online (Nielsen, et al., 2013) identified seven categories of information: reasons for LBP; treatment and management options; self-help information; psychological and social dimensions; lay stories;

quality assurance of information; and roles of different healthcare professionals and locally available services. Identified preferences for online presentation included: multimodality; emphasis on visual media; readability; and interactivity.

Little is known about healthcare provider views on desirable content and presentation of LBP information on the Internet however. Discordance has been identified between consumer and healthcare practitioner evaluations of LBP website content (Gremeaux et al., 2007; Gremeaux et al., 2012). This implies a need to consider both consumer and healthcare provider perspectives in the development of a LBP website that would be considered useful by both stakeholder groups. This article reports on a qualitative study which investigated healthcare practitioner perspectives on desirable content for a LBP website, and how this information could be presented online. Comparison is made with the results of the earlier complementary consumer study.

## **METHOD**

### *Design*

A fundamental qualitative descriptive design (Sandelowski, 2000) was used. This mirrored the design used in our earlier LBP consumer study (Nielsen, et al., 2013). Ethical clearance for the study was obtained from The University of Queensland Medical Research Ethics Committee.

### *Participants*

A convenience sample of experienced health-care providers with experience treating people with LBP was recruited via professional networks of the research team. Potential participants were invited via telephone (n = 3) or email (n = 47) to participate in the study. Eight of those invited to participate by email declined, making a total of 42 participants. An Information Sheet and Informed Consent Form were sent to all participants.

### *Data collection*

Data were collected through a combination of focus groups and telephone interviews. Three focus groups involving 31 healthcare professionals were conducted using a semi-structured interview guide (Figure 1). This method was considered appropriate in the first instance given the busy workplace demands of healthcare professionals. Following discussion of preliminary analysis after the third focus group, the research team were not satisfied that informational redundancy had been reached, that is, when no new relevant information is emerging from the interviews (Lincoln & Guba, 1985). Telephone interviews, involving five physiotherapists, four medical practitioners and two chiropractors were conducted until this point had been reached. Telephone interviews used the same semi-structured interview guide to enhance trustworthiness of the research by facilitating comparison of consistency of data across interview contexts (Patton, 2002). Two focus groups and all telephone interviews were conducted by MN, with the third focus group conducted by PWH. This ensured two researchers had direct experience of issues discussed by participants. Focus groups and telephone interviews were digitally recorded and transcribed verbatim into computer-readable files.

### *Data analysis*

Analysis was guided by qualitative content analysis (QCA) (Schreier, 2012), with QSR NVivo 9 ([www.qsrinternational.com](http://www.qsrinternational.com)) used for data management. This process is described in more detail elsewhere (Nielsen, et al., 2013). Briefly, analysis focused on observable transcript content, with little interpretation. It was an ongoing reflective process within the research team, involving a number of stages. Stages included an initial close reading of all transcripts to form an impression of the whole data set, deductive development of a coding frame using interview questions as a base framework, and inductive development

of sub-categories as analysis progressed. The Framework Matrices component of the NVivo software was used to chart the coded data, with data progressively refined, leading to a final set of descriptive sub-categories that adequately reflected the data content.

## **RESULTS**

The sample comprised 42 healthcare providers (23 female) who provided care for people with low back pain, including physiotherapists, medical practitioners and chiropractors (Table 1). Physiotherapy was the predominant professional discipline represented, reflecting the professional networks used for sample selection.

Analysis resulted in three main categories, with several subcategories. These included: (1) Information categories (Explaining low back pain, Treatment and management options, Myth-busting information and Communication with health professionals); (2) Information presentation (Combination of presentation mediums, Interactivity and Usability and readability); and (3) Perspectives on the proposed website. Details of the categories and representative quotes with deidentified participant descriptors (FG = Focus Group; TI = Telephone Interview) are shown in Table 2.

## **DISCUSSION**

This study explored health-care provider perspectives on the type of information for a LBP website and the ways in which it should be presented. Their perspectives were similar in some respects to those of people with low back pain, as identified in our complementary study (Nielsen et al. 2014) but there were important differences between consumer and provider perspectives. Both groups identified a need for information on the causes of LBP, but consumers expressed a desire for more specific explanatory diagnoses than providers deemed possible or comfortable to provide on a website. The reticence of providers lay in the

challenge of obtaining a precise diagnosis in many cases, and the limited value of a diagnostic label in directing treatment, beyond screening for specific pathologies requiring immediate medical or surgical attention. Providers wanted diagnostic myths such as ‘discs slipping out’ to be challenged.

Providers saw value in providing principles of management, for example, self-help strategies for acute episodes and information to assist prevention of recurrence. They considered there were advantages in provision of information about treatment options but there was less certainty with regard to which treatments to include and in what detail to present them. In contrast, consumers were interested in having access to detailed information regarding treatment methods and outcomes. Both consumers and participants identified the importance of providing the evidence base for different treatments; however, consumers would also like to see reviews by people who had used different treatments.

Most providers expressed concern regarding potential negative consequences of providing a high level of treatment specificity on a website when LBP was such an individual experience, whereas consumers expressed interest in including specific exercises (such as strengthening and stretching). Although both providers and consumers identified psychological aspects of the pain experience, such as fear of re-injury, to be addressed on a website, the consumer perspective also incorporated the impact of pain on family members, social relationships and activities. The providers did not identify other consumer interests, which included experiences and stories from others with LBP, ways of verifying the trustworthiness of a website, details of locally available resources, specific information for partners and other family members, and information about assistive and therapeutic products.

Provider perspectives on the ideal presentation of information on a website mirrored those of consumers in terms of using a mix of mediums, with an emphasis on visual presentation. Both groups identified the concept of layering information and being able to



interact with the site by clicking on diagrams, sub-headings and links. While consumer preferences included interacting with others with LBP via online forums and asking questions of ‘experts’, providers did not identify these as preferred features.

Discordance has been found between information provided by health-care providers and expectations of people with LBP, particularly with regard to diagnosis and management (Verbeek et al. 2004). Although our research reflects this in some way, our findings also point to the potential for the Internet to address this issue. Improving public information is one suggested strategy to reduce the gap between patient knowledge and expectations and what is offered by health-care providers (Verbeek et al. 2004). Increased understanding of the contribution of individual health literacy to the safety and quality of health care highlights the importance of providing consumers with clear, focussed and useable health information (Australian Commission on Safety and Quality in Health Care 2013). Health information needs to be relevant and meaningful, from the consumer’s perspective, if it is to be accepted and acted upon (Madden and Sim 2006). Increasing emphasis on person-centred care (Australian Commission on Safety and Quality in Health Care 2011) suggests that consumer participation in the development of health information materials is critical.

At the same time, research suggests that the development of online resources would benefit from the involvement of practising health-care professionals. There is evidence that health-care providers’ attitudes towards Internet-informed patients is moderated, in part, by the perceived relevance of the online information that people have accessed (Caiata-Zufferey and Schulz 2012). A survey of health website recommendation trends found that the perceived reliability of available websites influenced health professionals’ decisions to recommend websites to patients (Usher 2011).

Developing a LBP website that takes into account the perspectives of both consumers and providers would not only provide a widely accessible consumer education resource that

is currently lacking, but stands to produce a website that is more likely to be used and considered relevant by both target groups. Challenges remain, particularly with regard to management of the differing expectations with respect to diagnostic and management information. Ongoing involvement of consumers and providers in website design appears crucial for the successful navigation of these issues. This would include usability testing to progressively evaluate and improve the website. Ignorance of the contribution the Internet makes to consumer education is not a responsible or desirable option when the public is using the Internet increasingly to obtain health-related information from LBP websites of poor quality.

### **Limitations**

This study used a qualitative methodology with a sample generated from investigator professional networks. Thus, the sample had a higher representation of physiotherapists than other health-care professionals. The results may therefore not be representative of the provider population. However, transcripts from medical practitioners, physiotherapists and chiropractors were carefully compared during analysis to determine if there were major differences of opinion between the provider groups, and none were noted. The views of other allied health professionals were not canvassed, and this would be a worthwhile area for further research. As this study is part of a larger programme of research to develop a comprehensive and responsive online LBP resource, the results are not expected to stand alone. Rather, they contribute to an improving understanding of important components of the proposed website. Next steps include a larger study to confirm and prioritise consumer and provider information and presentation categories, and an evaluation of currently available LBP websites using consumer- and provider-generated preference data.

### **CONCLUSION**

This study provides insight into healthcare provider perspectives on provision of LBP-related information on the Internet. Comparison with data from our previous complementary consumer study has identified similarities and differences in information and presentation preferences between the two groups. The Internet-informed health consumer is fast becoming an established feature in the healthcare landscape. Although research has identified positive and negative aspects of this development, there is no possibility to reverse the trend of Internet use. The development of an online LBP resource that meets the needs and interests of both consumers and practitioners has some challenges, but is also necessary if the potential of the Internet to educate and improve outcomes for those living with LBP is to be realised.

#### **DECLARATION OF INTEREST**

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1. What sort of information would you like to see on a low back pain website?
2. Is there any information you don't think should be on such a website?  
*Probe: If yes, clarify what and why*
3. What is a good way for information to be presented on the internet?
4. Do you think a website of the kind being proposed is a good idea?  
*Probe: If yes, clarify why*  
*If no, clarify why*
5. Do you have any concerns about the website that is being proposed?  
*Probe: If yes, clarify what and why*
6. Is there anything else you would like to say about the topic that we haven't covered today?

**Figure 1: Provider interview guide**

**Table 1: Provider participant characteristics**

Descriptor	N	%
Gender		
Female	23	57.5
Male	19	42.5
Occupation		
Physiotherapist	29	69.0
Other Allied Health	5	12.0
Chiropractor (2); CAM Practitioner (1); Exercise Physiologist (1); Osteopath (1)		
Medical Practitioners	8	19.0
General Practitioners (4); Occupational Medicine Physician (1); Physiatrist/Rehabilitation Medicine (1); Anaesthetist/Pain Medicine Physician (1); Orthopaedic Surgeon/Rheumatologist (1)		



Table 2. Identified Interview categories, descriptors and representative quotes from interviews

Categories	Descriptor	Representative quote
<p>1. Information categories</p> <p>1.1. Explaining low back pain</p>	<p>Most participants suggested incorporating information on possible reasons for LBP. This included listing ‘red flag’ symptoms, to indicate when people should seek immediate medical advice, as well as information on anatomical structures and function, and simplified pain physiology. Prevalence and prognostic information was considered helpful in emphasising that back pain is common and the outcome usually favourable.</p> <p>Many participants commented on the need for a website to be positive and presented in a way that did not increase people’s concerns.</p>	<p>“The three things patients want to know, when I’ve treated them with bad backs seems to be: how did I hurt my back, can you make it better and how long will it take?” [physiotherapist, female, FG3].</p> <p>“What seems to be important is the fact that it’s very, very common. And more often than not to say, the statistics concludes in a favourable outcome.” [physiotherapist, male, FG3].</p> <p>“One of the problems with some of the medical stuff at the moment is that it’s all a bit scary and can make people more concerned than they need to be. So, I think the style of writing would have to be fairly</p>

	<p>It was also considered important to communicate the difficulty of finding a definitive pathophysiological explanation for many LBP episodes.</p> <p>Related to this was a need to explain the limitations of imaging techniques such as MRIs with regard to diagnosis and treatment.</p>	<p>important...keep it fairly light, not too many medicalised terms.” [general practitioner, male, T14]”</p> <p>“It’s very difficult to give a precise diagnosis, and very often we never arrive at a specific single point of pathology or pain origin in individuals” [anaesthetist/pain medicine specialist, male, T110].</p> <p>“I think another thing is to have something about the limitations of radiology in explaining back pain and to try and debunk some of the myths about degeneration and back pain and the perception that they’re going to decline because degenerative changes worsen over time but that’s an unfortunate, perhaps, exacerbator of back pain, is to focus on radiology, inappropriate focus on radiological findings. [general practitioner, male, T15].</p>
1.2 Treatment and	Participants linked explanations of why LBP occurs	“What I’d like to see is a little bit of a hierarchy of

<p>management options</p>	<p>with explanations of what can be done about it. Most participants thought it appropriate to include generic, evidence-based self-help information on managing acute pain episodes, and information aimed at prevention or limitation of recurrence. Examples included avoiding excessive bed rest; staying active and continuing as many normal activities as possible; paying attention to ergonomics and posture and staying at work or returning to work as soon as possible.</p> <p>Opinion about inclusion of more detailed information on specific treatment or management procedures was less clear-cut. One concern raised was the large number of options to choose from and the difficulty to decide which to include. Some participants suggested providing a summary of evidence-based</p>	<p>what sort of potential treatments are utilized and of benefit. I'd be concerned if there was a significant emphasis upon treatments that are not readily available to the public." [anaesthetist/pain medicine specialist, male, T110].</p> <p>"You don't want to have every possible treatment that's ever been considered out there, it'll just get confusing, and if you limited yourself to the strict evidence-base that might be a bit too limiting. So I think the difficulty would be knowing where to have that line in the sand about what you do and don't talk</p>
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	<p>treatments.</p> <p>Although advice to stay active was considered important, many participants expressed concern over prescription of specific exercises on a website and emphasised the need for training and supervision to help ensure these were done correctly.</p>	<p>about.” [general practitioner, male, TI4].</p> <p>“It’s dangerous when you get to [including specific exercises] because what’s good for some is not always good for others.” [physiotherapist, female, FG2]</p> <p>“There’s no way of getting feedback, so they could be interpreting it, no matter how good the pictures are or instructions, they could do it entirely incorrectly and end up in a big mess. [physiotherapist, female, FG2]</p>
<p>1.3 Myth-busting information</p>	<p>Many participants advocated inclusion of information aimed at challenging commonly believed “myths” or misconceptions about LBP and the fear these may invoke. Specifically mentioned were: ideas relating to discs that “pop” or “slip” in and out; the idea that decline through age or “degeneration” is inevitable,</p>	<p>“Anatomy is really good but it can be a little bit dangerous to have pictures of discs because people have vivid images of discs bulging and their back being out. So maybe a myth buster section, that your discs can’t actually slip anywhere and your back can’t go out anywhere, it’s all held together.”</p>

	<p>particularly when changes have been identified on an X-ray or other imaging technique; that LBP requires prolonged bed rest; and the inappropriate focus on radiological findings.</p>	<p>[physiotherapist, female, FG2].</p>
<p>1.4 Communication with health professionals</p>	<p>Issues concerning communication between practitioners and patients were discussed, with three categories of information identified. The first was guidance regarding the type of questions people with LBP should ask healthcare providers. Topics included self-help ideas, treatment options, expected outcomes and side-effects of particular treatments or surgery, qualifications and experience of the treating healthcare provider, and details of the provider's treatment plan and expected treatment timeframe. Second was a "Frequently Asked Questions" section by developing comprehensive responses to questions</p>	<p>"What I tend to do with my own patients, if they contemplate having surgery, is I educate them on the questions they need to ask the surgeon. Ask what's the likelihood that you get better and how much? How long will it take to recover? Can it make it worse and what are the chances of that? So they can make a real informed decision." [general practitioner, male, FG3].</p> <p>"Along the myth busters, if we could think about the questions our patients ask us, where they say things</p>

	<p>practitioners are regularly asked by patients.</p> <p>The third category involved strategies for initiating conversations with healthcare providers and tips for self-advocacy.</p>	<p>like, ‘Oh, my mum gets arthritis in her back so it must be arthritis.’” [physiotherapist, female, FG2]</p> <p>“I think it’s not only what questions they ask, but potentially some reassurance or support for being able to do things in a way to try to maximise their chances of getting an answer.” [physiotherapist, male, FG1].</p>
<p>2. Information presentation</p> <p>2.1 Combination of presentation mediums</p>	<p>Provider views regarding how LBP information should be presented on the Internet suggested a combination of methods to address different learning styles. Visual presentation was preferred over large amounts of text. Suggestions included videos of “experts” explaining aspects of LBP, videos demonstrating behaviours such as correct lifting and posture, and diagrams illustrating aspects of</p>	<p>“It’s a visual modality. So with this sort of stuff you’re probably going to want to have more diagrams, because that’s pretty much what we’re interested in. I mean, probably a no-brainer but endless text is not going to be a good thing.” [chiropractor, male, TI6]</p>

	<p>functional anatomy and layering of different body structures.</p> <p>Some participants cautioned against using “scary” images that would worry people or images that reinforced unhelpful messages, such as focusing on imaging results and pathology.</p>	<p>“The lightning strike and the great big red flashing bulging discs and a compressed nerve and all those sorts of things” [physiotherapist, female, FG3],</p>
<p>2.2 Interactivity</p>	<p>Participants recommended the capacity for users to interact with aspects of the site to obtain information. Suggestions included body diagrams that show pop-up information when different points are clicked, and layering of information to provide increasingly detailed information accessible by clicking links. The idea of directing or “funneling” users to information relevant to their own symptoms or interests was suggested. Some participants identified a need to separate information into specific sub-groups, such as</p>	<p>“It almost seems you have to have capacity to understand what that person wants to get out of the website when they go visit, whether it’s by answering questions or whatever, and then funnel the information that is truly appropriate to them” [physiotherapist, female, FG3].</p>

	acute and chronic LBP, and age-related groups.	
2.3 Usability and readability	Aspects of design that would contribute to usability and readability of the website were discussed. Ease of navigation was most frequently nominated for website usability. In addition, clear, simple, non-technical language was considered important to enhance readability.	<p>“The important thing is that your home page steers you into a simple index where you can just choose your conditions very easily...anything that involves more than three clicks down the line is probably a bit hard to get at.” [physiotherapist, female, TI2].</p> <p>“The challenge will be to make it informative but so that the language is easy enough to read for general people, so it’s not too professional, the language too medical.” [physiotherapist, female, FG3].</p>
3. Perspectives on proposed website	Overall, participants thought the proposed website was a good idea, although some included provisos in their comments. Given the increasing use of the Internet by people to obtain health-related information, most participants considered a website that provided good, evidence-informed information,	<p>“I don’t have a back pain website really, for consumers. I think there is certainly value in it. One of my goals would be something that is accepted by layers of government, supported by healthcare providers, healthcare funders, as well as consumers.” [anaesthetist/pain medicine specialist, male, TI10].</p>



	<p>without advertising or commercial interest, would be beneficial, both in providing the general public with accurate and useful information and providing a trusted resource that healthcare professionals could view with patients or refer to for follow-up information post-consultation.</p> <p>Challenges or concerns regarding the proposed website were identified, for example, the difficulty of developing an open-access site on a complex health condition, in a way that would meet diverse user needs; lack of control over how people would interpret the information provided; deciding which information to include or exclude; and the potential for the website to encourage people to self-treat in isolation in cases where they would perhaps benefit from consulting a healthcare practitioner for</p>	<p>“Websites can’t discriminate between individual patients. As a physiotherapist, I would explain completely different things to different people with similar problems. It just depends on who it is. So I think it’s a challenge, to put clear information on the website.” [physiotherapist, male, FG1]</p>
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	<p>individualised advice. The potential for unintended negative consequences, such as website information conflicting with that given by health practitioners, was noted. Other concerns included: how to encourage people to seek professional advice, without appearing to “spruik” particular professions, monitoring the website and keeping the information current, and the potential for controversy if the site is perceived as failing to provide balanced information in a manner that incorporates the perspectives of different healthcare disciplines.</p>	
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