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Patient Preferences for Treatment of Low Back Pain—A Discrete Choice Experiment

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ABSTRACT

Background: Back pain imposes a substantial economic and social burden, and treatment decisions are distorted by conflicting evidence. Thus, it is important to include patient preferences in decision making and policy making. **Objective:** To contribute to the understanding of patient preferences in relation to the choice of treatment for low back pain. **Methods:** A discrete choice experiment was conducted with consecutive patients referred to a regional spine center. The respondents (n = 348) were invited to respond to a choice of two hypothetical treatment options and an opt-out option. The treatment attributes included the treatment modality, the risk of relapse, the reduction in pain, and the expected increase in the ability to perform activities of daily living. In addition, the wait time to achieve the treatment effect was used as a payment vehicle. Mixed logit models were created to perform analysis. Subgroup analysis, dividing respondents into sociodemographic and disease-related categories, further explored the willingness to wait. **Results:** Respondents assigned positive utilities to positive treatment outcomes and disutility to higher risks and longer waits for effects of treatment and to surgical interventions. The model captured significant heterogeneity within the sample for the outcomes of pain reduction and the ability to pursue activities of daily living and for the treatment modality. The subgroup analysis revealed differences in the willingness to wait, especially with regard to treatment modality, the level of pain experienced at the time of data collection, and the respondents' preferences for surgery. **Conclusions:** The majority of the respondents prefer nonsurgical interventions, but patients are willing to wait for more ideal outcomes and preferred interventions. The results show that health care professionals have a very important task in communicating clearly about the expected results of treatment and the basis of their treatment decisions, as patients' preferences are highly individual.

Keywords: decision making, discrete choice experiment, low back pain, patient preferences, stated preferences.

Introduction

The inclusion of patient preferences in the decision-making process about optimal treatment is becoming more acceptable among doctors because knowledge about the patient's general expectations and preferences can guide the choice of treatment and, in some cases, even improve the outcome of treatment [1–5]. Patients also gain satisfaction from being heard and want to be included, even to a degree that has been previously underestimated by doctors [6,7]. Some authors suggest that including patients' preferences in clinical decision making is a central aspect of practicing evidence-based medicine [8] and that health care effectiveness should be judged partially on the extent to which patients' preferences are respected [9].

Low back pain (LBP) substantially reduces quality of life, poses an economic and social burden, and commonly leads to early retirement, absenteeism, and disability [10–12].

Patients suffering from LBP ultimately have to make a difficult choice from an array of treatment and management options, trying to optimize outcomes while reducing the burden of their disease [13]. Ultimately, patients may have to choose between two very distinct treatment paths: surgical or nonsurgical treatment.

In the case of LBP, the choice of treatment modality is complicated by the conflicting evidence and the lack of certainty about recovery with any treatment modality [10,14–17]. These complications have resulted in remarkable variation in surgery rates across the world because the indications for surgery appear to be multifaceted; in some cases, they are associated with the patient's health care practitioner or the center/region/country where treatment is provided [18–21]. The literature also indicates a high level of variance in treatment results in both surgically and nonsurgically treated patients [19,20,22–25]. For the group of patients suffering from unspecific LBP, the 5-year post-treatment results are the same regardless of treatment modality [26–30].

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These findings have prompted much discussion of the (cost-) effectiveness and the prioritization of various treatment strategies, both politically and among health care professionals, with suggestions of focusing on decreasing surgery rates due to higher costs and lack of clinical effects [13,19,20,31,32].

It has been argued that the absence of a notable difference in the effects of treatments could actually be seen as a window of opportunity for allowing true consideration of patients' preferences in clinical decision making [13]. Quantifying preferences and exploring trade-offs may be very helpful for patients and doctors. This process could play a valid role in addition to the other decision-making tools already used in clinical decision making about treatment for back pain [33–35].

The objective of this article was to increase the understanding of patients' preferences with regard to LBP treatment by quantifying the utilities and trade-offs of treatment options and treatment outcomes from the patient perspective. The study adds to the scarce literature on patients' preferences for treatments of back pain or spinal disease by analyzing preferences using state-of-the-art design and modeling techniques allowing for investigations of preference heterogeneity and by focusing on a novel part of the patient experience by investigating choices before they are influenced by hospital experts.

Methods

In eliciting preferences, discrete choice experiments are widely used and accepted. This methodology (as opposed to satisfaction surveys, for example) enables a systematic investigation of the importance of particular characteristics of the available options as well as the relative importance of the characteristics [36].

Development of Survey

The attributes and levels were chosen on the basis of knowledge from previous studies and a thorough qualitative process that included observatory fieldwork, interviews with patients and doctors, think-aloud exercises focusing on the discrete choice experiment in particular, and both qualitative and quantitative pilot-testing of the entire survey. Each step of the predesign process contributed to the development of the choice experiment. For a more complete description, see Kløjgaard et al. [37]

The included attributes reflected the treatment, the effects and risks of the treatment, and a time aspect—mirroring the large differences in the perceived effects of treatment for patients taking part in both surgical and nonsurgical cross-disciplinary therapies [6,10,18]. The qualitative work suggested that these attributes best reflected the complexity of the treatment choice faced by patients and also captured the most common and most important aspects of the drivers of the choice. The response options were based on qualitative and quantitative tests of different options and were intended to ensure trade-offs that were believable without being too extreme [36].

Table 1 shows the included attributes, levels, and hypotheses (the expected direction in which a change in the attribute levels would affect utility).

The questionnaire also contained questions on sociodemographic and pain-related information as well as information on treatment expectations, with the main characteristics of the respondents summarized in Table 2.

Experimental design

The survey used a Bayesian-efficient design created in Ngene software [38]. Priors were obtained from the quantitative pilot study (n = 17, each given 10 choice sets). This pilot survey had an orthogonal design. The pilot data were analyzed with a multinomial logit model, providing estimates of the size and direction of the coefficients.

In total, 18 choice scenarios were grouped into three different sets of six tasks, minimizing the correlation with the blocking variable [38,39]. Each task presented the respondents with three treatment options, with the first two alternatives representing the hypothetical treatment options. The remaining option was a no-choice option. The respondents were asked to indicate their preferred alternative.

The patients were randomly allocated to one of the three blocks, and we tested whether the randomization process was successful in terms of demographic parameters.

All the attributes were dummy-coded except the wait time, which was coded as linear.

An example of a choice set is shown in Figure 1.

Data Collection and Setting

The data were collected at The Spine Centre of Southern Denmark, Lillebælt Hospital, Middelfart, in the southern region of Denmark. This center is the only public spine center in the region, which has approximately 1.3 million inhabitants. Approximately 12,500 new outpatients are treated either nonsurgically or surgically each year. There are no inpatients examined at the center.

Any patient who has suffered from neck or back pain for more than 2 months can be referred to the center. Approximately half of these patients suffer from acute disc diseases, and the rest are experiencing long-lasting neck pain or unspecified LBP.

On their first visit, the nonacute patients are seen by a nurse. The first visit includes an initial screening by a nurse and a magnetic resonance imaging scan. Subsequent visits include a multidisciplinary team consultation, in-depth anamneses, and clinical examinations. Most of the patients are treated nonsurgically, while some patients are referred to the surgical specialists at the center.

In this study, the patients were given a questionnaire on their first visit to The Spine Centre. The questionnaire was paper-based and later returned by mail. Thus, the questionnaire was distributed before the patients had any knowledge about the diagnosis and treatment path suggested by the experts at the center. The results of their magnetic resonance imaging scans were also unknown.

To prevent bias, the nurses and secretaries who distributed the questionnaires were carefully instructed on numerous occasions to ensure that all eligible patients were included, bearing in mind the sole exclusion criterion of neck pain.

Econometric Analysis

To measure the patients' preferences, the choices from the experiment were analyzed in a logit model. When preferences

Table 1 – Attributes and levels.

Attribute	Levels	Hypothesis
Modality	Nonsurgical	
	Surgical	−/+
Pain level	Same	
	Less	+
	None	++
Problems with ADL	Same	
	Fewer	+
	None	++
Risk of relapse	1 in 10	
	2 in 10	−
	3 in 10	−−
Time to treatment effect	1, 3, 6, 12 mo	−

ADL, activities of daily living.

Table 2 – Respondents' characteristics.

Variable (n)	Mean ± SD	%
Age (y) (n = 336)	54.68 ± 0.73	
Sex (n = 340)		
Male		45.88
Female		54.12
No. of people in household (n = 340)		
1		22.94
2		44.71
3		15.88
≥4		16.47
Personal yearly income (DKK) (n = 327)		
<200,000		40.06
200,000–400,000		46.48
400,000–600,000		11.93
>600,000		1.53
Employment (n = 339)		
Employed		48.97
Unemployed		51.03
Unemployed due to retirement (n = 21)		12.43
Unemployed and receiving retirement benefits (n = 3)		1.81
Ever been on sick leave* (n = 333)		51.35
Ever applied for early retirement* (n = 334)		7.78
Ever lost a job*(n = 328)		11.28
Current back pain (on a scale of 1 [no pain] to 10 [worst]) (n = 337)	4.78 ± 0.12	
Current leg pain (on a scale of 1 [no pain] to 10 [worst]) (n = 342)	3.51 ± 0.15	
Use of pain killers (on a scale of 1 [no use] to 10 [constant use]) (n = 344)	5.08 ± 0.2	
Difficulty sleeping because of pain (on a scale of 1 [never] to 10 [all the time]) (n = 344)	5.04 ± 0.17	
Duration of pain (n = 340)		
<3 mo		9.41
3–12 mo		23.82
>12 mo		66.76
Time since first visit to doctor (n = 340)		
<3 mo		19.12
3–12 mo		22.65
>12 mo		58.24
Average number of visits/year to (n = 344)		
Chiropractor	7.9	
Physiotherapist	10.2	
Others (including hospitals)	3.1	
Preferred treatment (n = 318)		
Surgery		11.32
Nonsurgical		41.82
No preference		46.86
Expectations of treatment results (n = 336)		
No pain		38.99
Less pain		56.25
Same pain		4.76
No problems with activities of daily living		45.21
Fewer problems with activities of daily living		48.80
Same problems with activities of daily living		5.99
No possibility of relapse		25.30
Possible relapse		74.40
Treatment will work immediately		57.01
Treatment will work within 6 mo		33.76
Treatment will work after more than 6 mo		9.24

DKK, Danish Kroner.
* Due to back pain.

are expected to vary among the respondents, heterogeneity must be taken into account to avoid biased interpretations of the results. A mixed multinomial logit model (MMNL) is often used for this purpose [40–42]. The MMNL model accounts for unobserved, continuous preference heterogeneity by decomposing coefficients to their means and SDs and allowing the coefficients to vary across the respondents; hence, the coefficients are treated as random and not fixed.

MMNL models also loosen the requirement of independence from irrelevant alternatives (IIA-assumption). This assumption was tested but did not hold [41–44].

Different model specifications were tested. In the final model, the waiting time for an effect and the risk of relapse were set as fixed parameters and the treatment modality, the level of pain, and the ability to perform activities of daily living (ADL) were set as random variables because heterogeneity was demonstrated for these variables, while no heterogeneity around the mean could be observed for the risk parameter.

Based on our hypotheses and on suggestions in the literature [45] about distributions, the random parameters were assumed to have lognormal distributions.

A fixed constant for the no-choice option was included in the model.

The sensitivity of the final model was tested by allowing for a range of different Halton draws, showing no significant effect on parameters. The final model uses 100 draws.

The marginal rates of substitution (MRS) were calculated as the willingness to wait for an effect of treatment (Time [Table 1]) relative to positive changes in the levels of the other attributes. Using time as a "price" in stated preferences approaches has been tested in the field of health care and other fields of study and established as a valid and sensible approach [46–51].

A subgroup analysis further investigated the potential effect of sociodemographic variables and disease-related characteristics on preferences. The analysis was performed by dividing the respondents into groups and estimating MMNL models, assuming that all parameters were normally distributed but otherwise specifying the variables in the same manner as the overall model. The MMNL models with lognormal distributions failed to converge, possibly because of the small sample sizes in some subgroups.

The analyses were performed using Stata 12.

Results

Respondents' Characteristics

A total of 561 questionnaires were distributed during the spring/summer of 2012, and 348 were returned (for a response rate of 62%). Standard data on all the patients who received a

Treatment A	Treatment B
The treatment is surgery.	The treatment is cross-disciplinary therapy.
After treatment, your pain will be unchanged.	After treatment, you'll have no pain.
After treatment, you'll have fewer problems with activities of daily living.	After treatment, you'll have the same problems with activities of daily living.
The risk of relapse is 1 in 10.	The risk of relapse is 3 in 10.
It will take 3 months for the treatment to work.	It will take 12 months for the treatment to work.

I prefer (choose one) Treatment A_____ or Treatment B_____

I do not want either of these treatments _____

Fig. 1 – Example of a choice set.

questionnaire was recorded in a database. A nonresponse analysis was performed using t tests and revealed no differences between the groups with regard to age, sex, or mean values for back or leg pain.

Table 2 shows the respondents' characteristics.

As seen in Table 2, the respondents are fairly evenly distributed between the genders. They are mostly middle-aged and come from varied social and economic backgrounds, although most have low or moderate incomes. The midrange pain scores indicate that this group of patients is not as strongly affected by pain as we might have expected in surgical wards. Most of the respondents, however, have suffered from back pain for more than a year and made a series of visits to various therapists before being referred to the center.

Econometric Results

Table 3 shows the regression results from the random parameters MMNL model.

The model demonstrated an R^2 of 0.16, and the use of random parameters captured and explained the heterogeneity within the sample.

Overall, the respondents are behaving as expected and in accordance with the hypotheses about the effects of the attributes on utility. The respondents assign positive utilities decreasing or eliminating pain and reducing or eliminating their problems with everyday activities. Negative utilities are assigned to higher levels of risk, longer wait times, and surgery. All the parameters except for the 20% risk of relapse are statistically significant.

Table 3 – Results from the mixed multinomial logit model.

Variable	Mean* (SE)	SD (SE)	MRS (mo) (95% CI)
Waiting time for effect	−0.08 (0.01)†	NA‡	
Status quo constant	0.41 (0.17)§	NA	
Treatment modality			
Nonsurgical	0	NA	
Surgical	−1.82 (0.2)†	2.36 (0.23)†	−23.8 (−33.5; −14.1)†
Risk of relapse			
10%	0	NA	
20%	0.03 (0.14)	NA	0.4 (−3.3; 4.1)
30%	−0.4 (0.14)†	NA	−5.3 (−9.3; −1.3)†
Pain			
Same	0	NA	
Less	2.05 (0.1)†	1.19 (0.02)†	26.8 (16.6; 36.9)†
None	2.68 (0.1)†	1.59 (0.04)†	35.0 (21.6; 48.4)†
ADL			
Same	0	NA	
Fewer issues	0.88 (0.32)§	1.20(0.03)†	11.49 (7.11; 15.9)†
No issues	1.48 (0.17)‖	1.78 (0.04)†	19.33 (11.9; 26.7)†
Model fit			
χ^2 (5)	277,43		
LL (0)	−1812.0997		
LL (model)	−1527.9328		
Pseudo R^2	0.16		
N (observations)	5307		
N (respondents)	348		

ADL, activities of daily living; MRS, marginal rates of substitution; NA, not applicable; SE, standard error.

* All lognormal coefficients were transformed to a normal distribution by taking the exponential value of the lognormal coefficient + SD of the coefficient divided by 2.

† Significant at a 1% level.

‡ SD not applicable for fixed variables.

§ Significant at a 5% level.

‖ Significant at a 10% level.

For the random parameters (treatment modality, pain, and ADL), the SDs reveal coefficient heterogeneity within the sample.

Because of the dummy coding, the status quo constant cannot be interpreted [52]. Running the model with effects coding, however, resulted in a positive and significant constant, indicating that the participants assigned positive utility to opting out instead of choosing an alternative (results not shown here).

As expected, the patients are willing to accept longer wait times as a trade-off for better effects. The MRS also show that the respondents need compensation (i.e., faster effects) to accept greater risk and surgery. More specifically, patients are willing to wait 2 years for the effects of treatment to avoid surgery. This result indicates that patients are willing to take part in nonsurgical treatment for a long period of time if the results of the treatment are desirable. Notably, patients are willing to wait almost 3 years to become free of pain, while they are willing to wait nearly half a year on average for the effects of treatment to avoid an increase in the risk of relapse from 10% to 30%. The subgroup analysis further investigates these findings.

Subgroup Analysis

Table 4 presents the rates of substitution for a range of subgroups based on sociodemographic variables and disease indicators for which a difference was observed.

The subgroup analysis indicates that women are less reluctant than men to have surgery; women also react to high levels of risk, whereas the MRS for both risk parameters are insignificant for men. In general, men are willing to wait longer for better results (in terms of both pain and ADL), but overlapping confidence intervals prevent us from drawing solid conclusions. There is a tendency toward a greater willingness to wait for better pain and ADL-related outcomes for respondents who work. Similar results were observed for the respondents of working age (data not shown). The respondents who score highest on the pain scale are less willing to wait to avoid surgery and are less risk-averse than the respondents with lower pain scores. There is a tendency toward a greater willingness to wait for better pain relief, improvement in performing ADL, and avoiding surgery among the participants who have had symptoms for shorter periods of time. Similar results were observed for patients whose first visit to a general practitioner for back pain–related symptoms was a short time ago, which could indicate an adaption to symptoms (data not shown).

When they were asked directly, patients with an ex-ante preference for surgery have a positive substitution rate for that treatment option, indicating a willingness to wait for results from this treatment option. While the subgroups preferring surgery/nonsurgery have similar MRS for pain deductions, the groups differ in their deductions for being able to perform everyday activities: the MRS for the patients who do not prefer surgery are highly significant, although less than 1 year, while the results were not significant in the group that prefers surgery.

Other variables (income, history of sick leave, and expectations about the results) were tested, but no differences between the groups were observed.

Table 4 – Subgroup analysis: MRS (95% CI for MRS).

Attribute	Male No. of obs.: 2421	Female No. of obs.: 2808	Working No. of obs.: 2808	Not working No. of obs.: 2403	Pain low (0–6) No. of obs.: 3798	Pain high (7–10) No. of obs.: 1509	Duration of symptoms <12mo No. of obs.: 1698	Duration of symptoms >12mo No. of obs.: 3609	Prefer surgery ex ante No. of obs.: 543	Prefer nonsurgery ex ante No. of obs.: 2190
Surgery	−26.43* (−47.5; 5.3)	−19.39† (−27.4; 11.4)	−29.03† (−48.2; −9.8)	−17.95† (−27.6; −8.3)	−32.32† (−49.2; −15.4)	−7.69* (15.4; −0.1)	−14.34† (−22.2; −6.5)	−28.12† (−44.6; −11.7)	13.69* (0.2; 27.2)	−23.89† (−33.3; −14.5)
Risk 20	1.95 (−5.6; 9.5)	−1.16 (−4.7; 2.4)	−2.78 (−9.1; 3.6)	3.96 (−0.9; 8.8)	−0.86 (−6.0; 4.3)	4.54 (−1.3; 10.4)	−0.17 (−4.5; 4.1)	2.42 (−3.4; 8.2)	5.46 (−3.2; 14.2)	−2.10 (−6.0; 1.8)
Risk 30	−6.39 (−14.8; 1.9)	−4.64† (−8.2; −1.1)	−6.30* (−13.1; 0.5)	−4.55‡ (−9.3; 0.2)	−9.29† (−15.8; −2.8)	0.35 (−4.8; 5.6)	−5.21* (−9.8; −0.7)	−4.59 (−10.2; 0.9)	6.46 (−2.8; 15.7)	−6.14† (−10.1; −2.2)
Pain less	26.31* (5.3; 47.3)	17.14†(10.7; 23.6)	28.57† (10.2; 46.9)	16.07† (7.7; 24.4)	27.07† (12.8; 41.4)	15.69† (6.4; 24.9)	11.53† (5.2; 17.9)	28.69† (12.5; 44.9)	14.01* (0.6; 27.4)	16.10† (9.3; 22.9)
Pain none	30.78* (6.5; 55.1)	24.29† (10.7; 23.6)	36.89† (13.8; 59.9)	22.71† (12.2; 33.3)	33.56† (16.3; 50.8)	22.59† (10.5; 34.7)	19.84† (10.8; 28.9)	34.52† (15.5; 53.6)	20.90* (2.9; 38.9)	19.20† (11.7; 26.7)
ADL fewer	8.50‡ (−1.5; 18.5)	9.38† (4.8; 14.0)	14.97† (4.6; 25.4)	3.92 (−1.2; 9.1)	13.49† (5.3; 21.7)	5.81 (−1.4; 12.9)	7.22† (1.9; 12.5)	9.89† (2.2; 17.6)	0.84 (−8.8; 10.5)	5.93† (1.7; 10.1)
ADLnone	17.81* (2.6; 33.1)	11.30† (6.3; 16.3)	24.73† (8.7; 40.8)	7.25* (1.4; 13.1)	18.95† (8.2; 29.7)	10.57† (3.2; 17.9)	10.33† (4.1; 16.6)	18.27† (7.0; 29.6)	7.04 (−2.9; 16.9)	9.21† (4.3; 14.2)

ADL, activities of daily living; MRS, marginal rates of substitution; obs., observations.

* Significant at a 5% level.

† Significant at a 1% level.

‡ Significant at a 10% level.

Discussion and Conclusion

There is limited existing literature about patient preferences for spinal treatment, and there have been very diverse approaches applied to elicit preferences.

The existing results indicate a preference for surgical procedures, especially if the symptoms are severe and persistent [53] and if the patients have a very negative attitude toward their present state [24]. Some literature suggests that patients seem to

reach a point where they believe that surgery is the only option [54,55] and that most patients believe that surgery is better able to reduce pain than nonsurgical treatment procedures [18,28,54].

The patients in this study mostly suffered from moderate but long-lasting symptoms, and their problems affected their everyday lives to a degree that one might expect a prosurgical preference, based on the existing literature. However, the tendency for long-lasting symptoms to lead to prosurgical preferences is somewhat contradicted: the patients who had experienced symptoms for a longer period of time were willing to wait longer for results from nonsurgical options than the patients who had experienced symptoms for a shorter time.

However, the literature indicates that the severity of pain is the most important factor in preferences that favor surgery. Although the MRS for no pain shows that pain reduction has a remarkable effect on willingness to wait, the patients in this study do not favor surgery. This result could be explained by the fact that the patients in this study tend not to score high on the current pain scale. Even the patients who have the highest pain scores are willing to wait over half a year for results, although the subgroup analysis does support the finding in the literature that patients demonstrate less willingness to wait if they are in more pain.

The substantial heterogeneity in the preference for treatment seen in the model could indicate that a subgroup of patients prefer surgery; these respondents might have preferences that are more similar to the findings in the literature. This assumption is confirmed in the subgroup analyses on preferences for surgery, in which the respondents opting for surgery exhibit strong preferences for this type of treatment.

The study site might offer one reason why the results differ from what has previously been shown. Research suggests that patients in general might prefer what they are expecting to receive [53]. In this study, the recruitment site specializes in nonsurgical treatment of back pain with the possibility of a surgical referral, and this specialization offers a plausible explanation for the preferences expressed by the respondents. Most of the results from the existing literature have been based on preferences collected in surgical wards, which might bias the observed preferences in favor of surgery [53]. The literature also suggests that patients tend to prefer or do whatever their doctor tells them to do, indicating that rising surgery rates could reflect the preference of doctors and not necessarily patients' [18,54]. In this study, the recruitment of patients was deliberately timed to capture patients as they entered the specialized health care system and before they were influenced by hospital experts. And even if the long patient pathways gives room to practitioners influencing patients' preferences, the presented results might better reflect the true preferences of a patient with back pain. Further studies in this field could investigate doctors' treatment preferences and their possible correlations with patients' preferences looking into the preferences and the agency relationship.

Overall, the quality of the data collected in this study is high. The paper survey method used to collect the data resulted in an adequate response rate. Previous studies have shown higher participation rates in stated preferences studies that are conducted on-site [56]. In general, the respondents completed the entire survey resulting in few missing observations. One study showed that patients with back pain with more severe pain are more likely to participate in surveys of this type [32], but the nonresponse analysis did not confirm that finding in this study. The study site was chosen because it is the main site for back pain treatment in the large southern region of Denmark, which is home to one fifth of the entire Danish population. This study, however, is mainly representative of the patients who attend the center because referral practices and treatment strategies differ between regions (and countries), as highlighted in the Introduction.

The results have clear policy implications and contribute additional information to the discussion about treatment choices and surgery rates. The fact that most patients prefer nonsurgical interventions and are willing to wait longer for ideal effects provides further support for a policy initiative aimed at choosing the right candidates for surgery. Obviously, a longer period of nonsurgical treatment options cannot be standardized and must be evaluated in each individual case. Overall, our results, combined with the existing literature, suggest that one type of treatment does not fit all. Health care practitioners need to make highly individualized decisions, taking both evidence and patient preferences into account and sometimes analyzing the trade-offs in terms of the advantages and disadvantages of different treatment options.

Patients are particularly willing to wait and endure lower quality of life for quite some time if the effects of treatment relieve their difficulties in performing everyday activities and—in particular—relieve their pain, which is not an easily attainable clinical goal. Thus, the results indicate that doctors have a very important task in communicating clearly about the expected results of treatment and the basis of their treatment decisions.

In summary, this article offers an important contribution to the understanding of patient preferences for the treatment of LBP. It quantified the utility of treatment and treatment outcomes from the patient perspective before they are influenced by hospital experts.

Notwithstanding the limitations of the approach, the results suggest that choice experiments provide valuable and useful information about the preferences of patients who experience LBP. The literature indicates that back pain imposes a substantial economic and social burden and that treatment decisions are distorted by conflicting evidence, which indicates the importance of including well-elicited patients' preferences in decision making and policy making.

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