QUANTITATIVE METHODS FOR MEASURING PATIENT PREFERENCES: PILOT STUDY FOR PATIENTS WITH LOCALIZED PROSTATE CANCER

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Abstract

This pilot study examines patient preferences in patients with localized prostate cancer using quantitative methods for measuring Discrete Choice Experiment (DCE) and Best-Worst Scaling (BWS) type 3. The study focuses on key attributes that may influence patients' treatment decisions. Patients chose one of two or three hypothetical treatment scenarios based on key attributes: risk of erectile dysfunction; urinary incontinence; other side effects; transport to hospital and return to normal activities. Additionally, patients evaluated both methods in terms of difficulty and satisfaction using a Likert scale. Results show that the most important attribute for patients with localized prostate cancer is the risk of erectile dysfunction (36.0%, 29.8%), followed by the risk of urinary incontinence (24.9%, 23.0%). In both attributes, patients wanted to avoid the worst levels and vice versa. The results of preferred attributes did not differ between methods. Patients found the Discrete Choice Experiment method less difficult and were more satisfied with it. This research suggests that quantitative approaches, such as DCE and BWS, can be valuable tools for better understanding patient preferences and integrating them into personalized treatment decision-making.

Keywords

Discrete Choice Experiment, Best-Worst Scaling case 3, localized prostate cancer, patient preferences

Introduction

Prostate cancer is the third most common type of cancer in men in Europe. The latest statistics from 2020 show that the incidence of prostate cancer in Europe was nearly 336 000 new cases per year, it means 23% of newly diagnosed male cancer cases in 2020. The mortality rate of prostate cancer in the EU was almost 70 000 cases per year in 2020 [1]. In the Czech Republic, the incidence of prostate cancer (PCa) in 2022 was 9839 cases and 1488 patients died from this cancer [2].

With the growing demands of modern medicine and patients, there is an increasing need to include patient preferences in decision-making in the field of research and assessment of new health technologies and treatment processes [3, 4]. Shared decision-making is especially important when deciding on technologies whose effectiveness and satisfaction with treatment can be influenced by preferences, such as the choice of treatment for localized prostate cancer [4, 5].

As research by Marsh et al. [6, 7], pilot studies for the use of patient preference survey methods are underway in a number of European countries. As quantitative methods, comparison methods such as Time Trade-off (TTO) or Standard Gamble (SG), ranking methods (e.g. SMART), pairwise comparison methods—specifically Analytic Hierarchy Process (AHP) or choice-based methods—Discrete Choice Experiment (DCE) and Best-Worst Scaling (BWS) have been analyzed. There is extensive debate among experts as to which method of detecting patient preferences is best. Each method has its own strengths and weaknesses and appropriate uses. Although the application of qualitative methods prevails in practice, quantitative methods are starting to be used more and more for their advantages [3, 7].

While qualitative data on patient preferences reflect information about patient experience and disease burden, quantitative assessments of patient preferences provide information about what attributes are important to patients and what trade-offs they are willing to make between attributes. Some patients may be willing to accept the higher risks of examination, treatment or intervention, even assuming that it will bring even a modest benefit, while others may be risk averse overall, regardless of the potential benefits. This also

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applies to the field of oncology, particularly diagnosis and treatment, where the benefits, risks and side effects may be assessed very differently from the patient's or doctor's perspective.

The aim of the pilot study was the application of quantitative methods Discrete Choice Experiment (DCE) and Best-Worst Scaling (BWS) type 3 methods for determining treatment preferences in patients with localized prostate cancer (TNM classification: T1–T2:N0:M0).

Methods

Study Design

Data collection for the questionnaire survey took place from 27. 2. 2023 to 7. 5. 2023 in two smaller healthcare facilities in the Czech Republic. Patients older than 18 years with localized prostate cancer who agreed to participate in the study were included in the study. Each part of the questionnaire survey was preceded by brief instructions to help patients better understand how each section of the survey would proceed and how they should answer the questions.

Survey Development

The survey began with socio-demographic questions on age, highest educational level, marital status and how long the patient has been aware of their diagnosis. After completing the questions, the patient was randomly transferred using a cross-over study design to the DCE questions and then to the BWS questions, or in reverse order.

Discrete Choice Experiment

The patient selected their preferred treatment strategy from the presented choice sets. Each choice set consisted of two hypothetical treatment scenarios created from generated combinations of attributes and their levels. Levels for each attribute were presented through text or pictograms, each accompanied by a descriptive explanation (Fig. 1) [8]. In assessment of preferences is assumed that the patient will choose the treatment option that provides the greatest benefit and/or the least harm. Choice sets could not be skipped, but the patient could go back and reassess the chosen answer throughout the questionnaire.

Because 5 attributes were chosen to assess treatment strategies (4 having 3 levels, 1 attribute with 4 levels), it was not possible to present all possible combinations of attributes and their levels to patients in the questionnaire (full factorial design). The number of sets was limited to 8. The partial factorial is selected from the full factorial so that all necessary effects could be estimated without the need for all combinations of all levels and attribute [9].

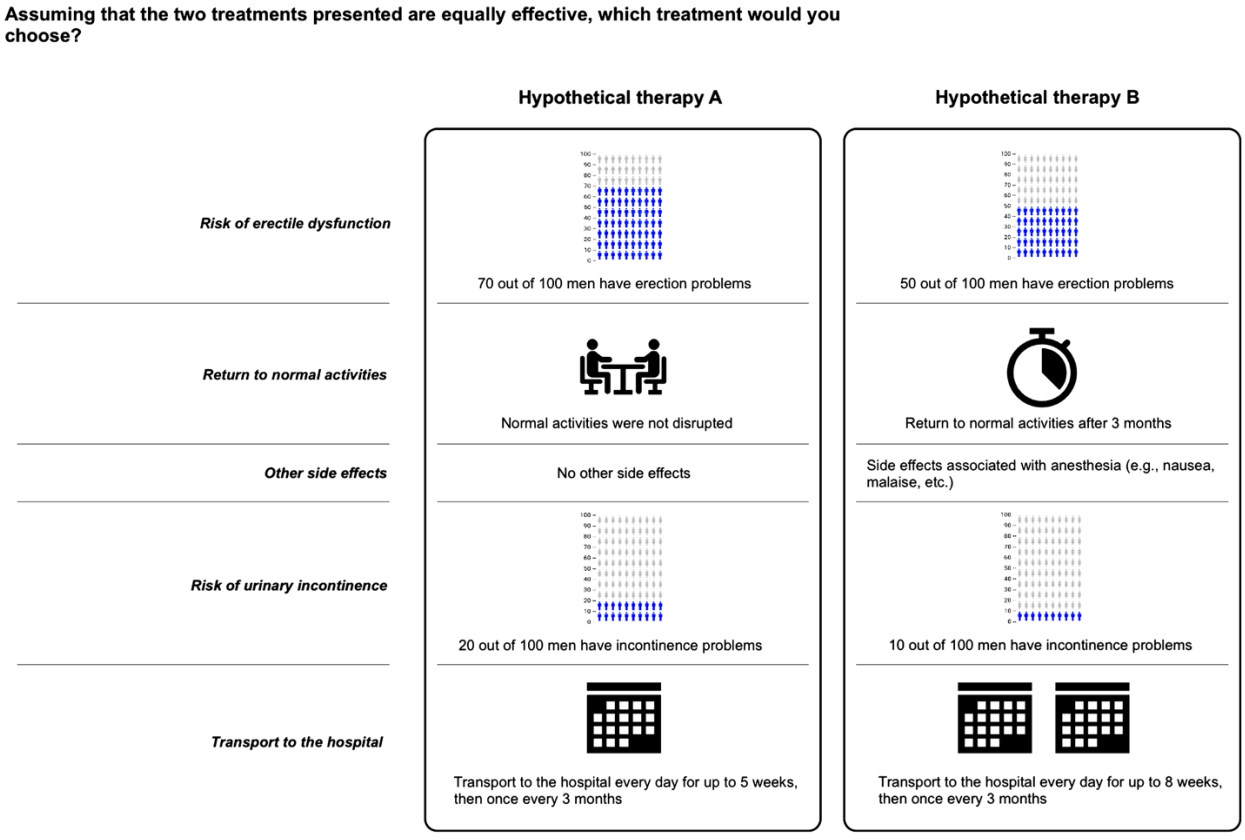

Fig. 1: An example of choice set used in the discrete choice experiment.

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Best-Worst Scaling

Similar to the DCE part, 8 choice sets were presented to the patients sequentially. For each set, the patient chose from 3 hypothetical treatment scenarios (see Fig. 2 for an example of a choice set). The patient had to rate one scenario as the best option, and one as the worst option among the offered scenarios. Patients had to complete all choice sets, again they could go back and change their choice of best and worst scenario at any time.

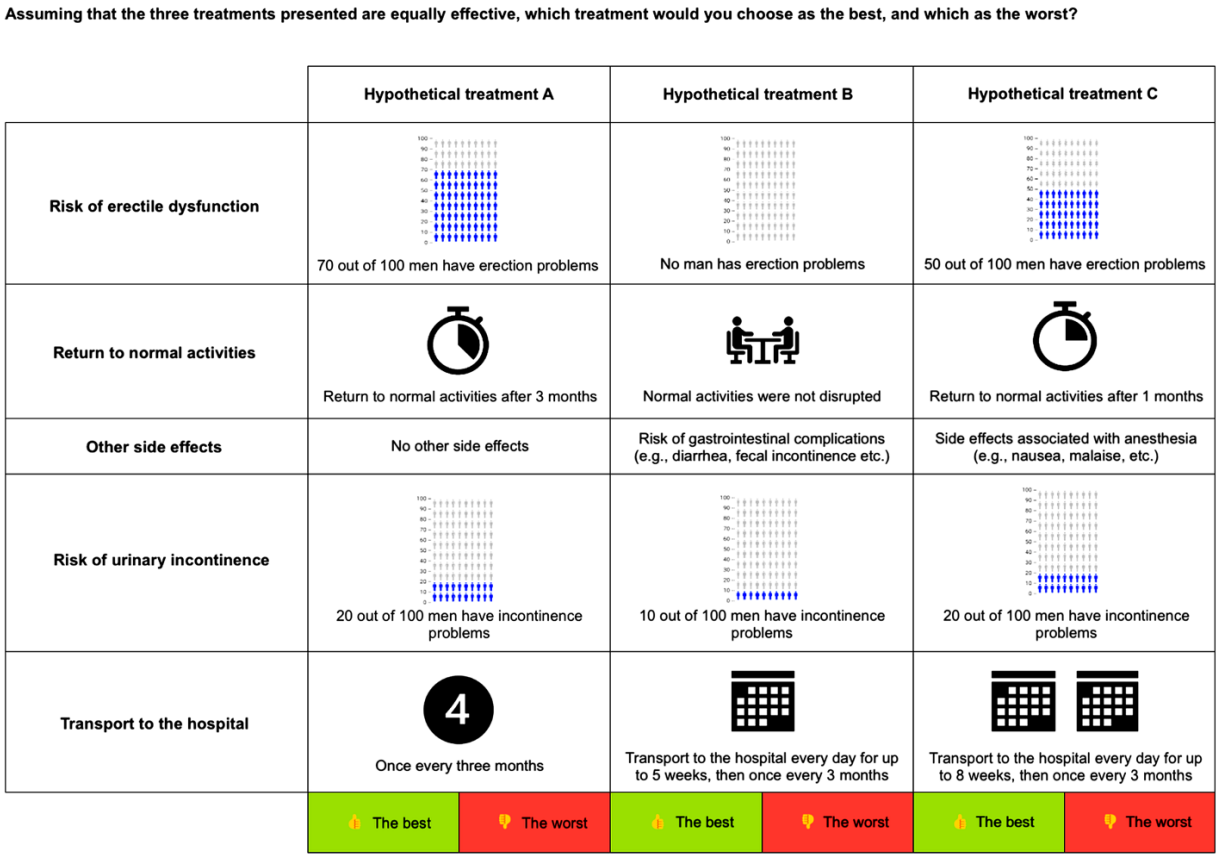

Fig. 2: An example of choice set used in the best-worst scaling.

Comparison of DCE a BWS

Patients rated the difficulty and satisfaction with the preference assessment method in two questions at the end of both questionnaires, using a Likert five-point scale.

Attributes and Levels

To determine appropriate attributes and levels, three treatment methods for localized prostate cancer were considered: active surveillance, radical prostatectomy, and radiation therapy. Based on a literature review [10–15], and consultations with urologists, oncologists, and patients, the following attributes were selected: risk of erectile dysfunction; risk of urinary incontinence; return to normal activities; other sides effects and transport to the hospital. An overview of the attributes and their levels are presented in Table 1.

Data analysis

Only responses from respondents who completed the entire survey were analyzed, incomplete responses were excluded. Both methods were evaluated using the platform Conjointly (Analytics Simplified, Sydney, Australia) to determine patient preferences for individual attributes and their levels. A multinomial logit model was used to identify factors that influence prostate cancer patients' preferences for treatment modality selection.

Discrete Choice Experiment

As Donin et al. study [8], we processed the DCE choices of the respondents within the Conjointly platform. Individual-level preference coefficients were calculated using Markov chain Monte Carlo hierarchical Bayes estimation. As the result of this analysis, relative

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importance scores and their 95% confidence intervals (CI) were estimated for selected attributes, which measure how much each characteristic affects a participant's decision for prostate cancer treatment modalities.

Table 1: Attributes and levels for hypothetical treatment modalities for localized prostate cancer.

Attributes	Levels
Risk of erectile dysfunction	1) No man has erection problems 2) 50 out of 100 men have erection problems 3) 70 out of 100 men have erection problems
Risk of urinary incontinence	1) No man has incontinence problems 2) 10 out of 100 men have incontinence problems 3) 20 out of 100 men have incontinence problems
Return to normal activities	1) Normal activities were not disrupted 2) Return to normal activities after 1 month 3) Return to normal activities after 3 months
Other side effects	1) No other side effects 2) Risk of abdominal difficulties (e.g., discomfort, stool issues etc.) 3) Other side effects of the urinary bladder (e.g. frequent urination, burning during urination, etc.) 4) Side effects associated with anesthesia (e.g. nausea, malaise, etc.)
Transport to the hospital	1) Once every three months 2) Commuting to the hospital every day for up to 5 weeks, then once every 3 months 3) Commuting to the hospital every day for up to 8 weeks, then once every 3 months

Best-Worst Scaling

The MaxDiff model (also known as Maximum Difference Scaling or Best-Worst Scaling) was used to process the BWS 3 data in Conjointly platform. In each MaxDiff question, the software asks respondents to choose the best and worst option from a randomly provided set of options. The results of the MaxDiff analysis are presented in a bar chart detailing the percentages of the most and least preferred options and the net percentages. This visualization represents how often the attribute level was selected as the best option and how often it was identified as the worst preferred option given its occurrence in the survey and is displayed as a percentage [16].

Results

Study Population

From the total of 76 questionnaires, responses from 43 respondents were processed. Respondents who did not confirm informed consent (3) and those with incomplete responses (30) were excluded from the dataset. The average age of men who completed the DCE and BWS was 63.6 years, of whom 27 (62.7%) had been diagnosed within the last two years. Most respondents were either married or divorced (51.1% and 25.5%, respectively). Further details about the characteristics of the sample are provided in Table 2.

Table 2: Participants' characteristics.

Characteristics	Participants, *n* (%) *n* = 43
Age, years	
18–30	2 (4.6)
31–40	1 (2.3)
41–50	0 (0.0)
51–60	11 (26)
61–70	16 (37.2)
71–80	12 (27.9)
≥81	1 (2.3)
Not to respond	0 (0.0)
Education background	
Primary education	2 (4.6)
Secondary education	15 (34.8)
Post-secondary education	7 (16.2)
Bachelor or equivalent	5 (11.6)
Master's or equivalent	13 (30.2)
PhD or another doctorate	1 (2.3)
Not to respond	0 (0.0)
Duration since diagnosis, years	
0–1	15 (34.8)
1–2	13 (30.2)
3–5	10 (23.2)
6–8	4 (9.3)
≥9	0 (0.0)
Not to respond	1 (2.3)
Marital status	
Single	3 (6.9)
Long-term relationship	3 (6.9)
Married	22 (51.1)
Divorced	11 (25.5)
Widowed	4 (9.3)
Not to respond	0 (0.0)

Discrete Choice Experiment

The Fig. 3 illustrated the relative importance of attributes (%); relative importance of levels (%), and their 95% confidence intervals. Respondents placed most importance on the risk of erectile dysfunction (36.0 (95% CI, from 30.1 to 41.6)) and the risk of urinary incontinence (24.9 (95% CI, from 22.7 to 27.2)). As the

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probability of incontinence-related issues increased, patients' efforts to avoid these risks in their treatment choices also intensified. The relative score –13.3 (95% CI, from –12.0 to –14.4). The third most important attribute was the appearance of other side effects with a relative score of importance 19.4 (95% CI, from 16.0 to 22.7). The other side effects associated with intestinal troubles was the least preferred for patients—relative score of importance –12.6 (95% CI, from –15.3 to –9.8). On the other hand, patients were willing to accept the troubles associated with narcosis (6.8 (95% CI, from 4.7 to 8.8)).

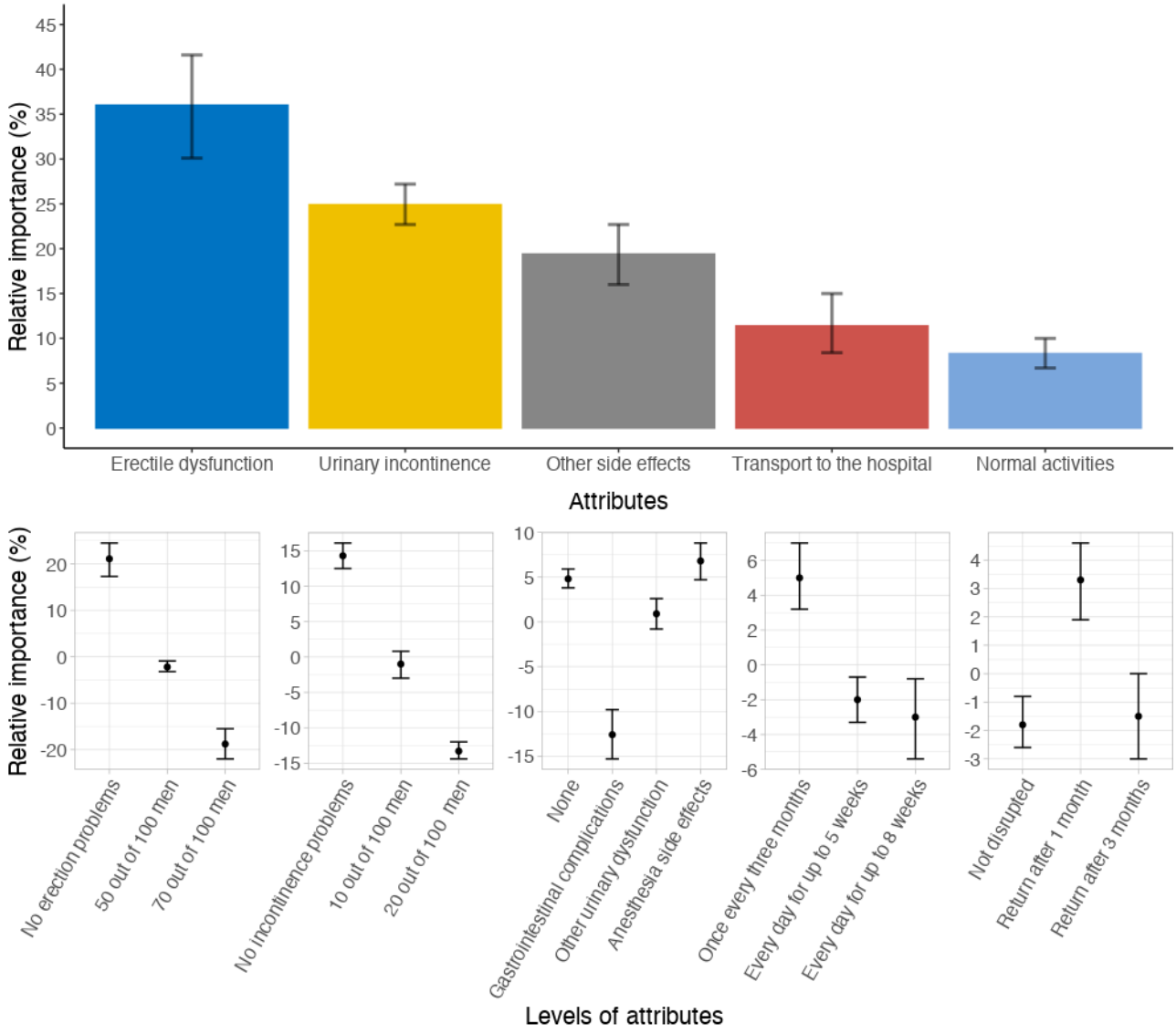

Fig. 3: The relative importance of DCE attributes; relative importance of DCE levels, and their 95% confidence intervals.

Best-Worst Scaling

In Fig. 4 , the relative importance scores of attributes (%), relative level values (%), and their 95% confidence intervals are shown. The most significant attributes in selecting a hypothetical treatment for prostate cancer for respondents were the risk of erectile dysfunction (29.8 (95% CI, from 24.6 to 35.5)) and the risk of urinary incontinence (23.0 (95% CI, from 20.4 to 26.0)). Patients preferred a hypothetical treatment variant where no man had erection problems (19.7 (95% CI, from 16.5 to 23.1)), and they wanted to avoid variants with a 50% and 70% probability of erectile dysfunction risk (–4.8 (95% CI, from –6.5 to –3.1)) respectively (–14.9 (95% CI, from –18.3 to –11.8)). The second most important attribute was urinary incontinence. With increasing probability of the risk of urinary incontinence, there was an effort by patients to avoid this hypothetical treatment—relative importance score –14.0 (95% CI, from –15.9 to –11.8), whereas they

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preferred a variant where there was no risk of urinary incontinence (11.4 (95% CI, from 9.1 to 13.4)). With a relative importance score of 20.2 (95% CI, from 16.6 to 24.1) for the attribute other side effects, patients tended to avoid the risk of intestinal troubles (–10.5 (95% CI, from –14.5 to –7.0)). The risk of problems associated with anesthesia was considered less severe (5.7 (95% CI, from 3.5 to 7.6)).

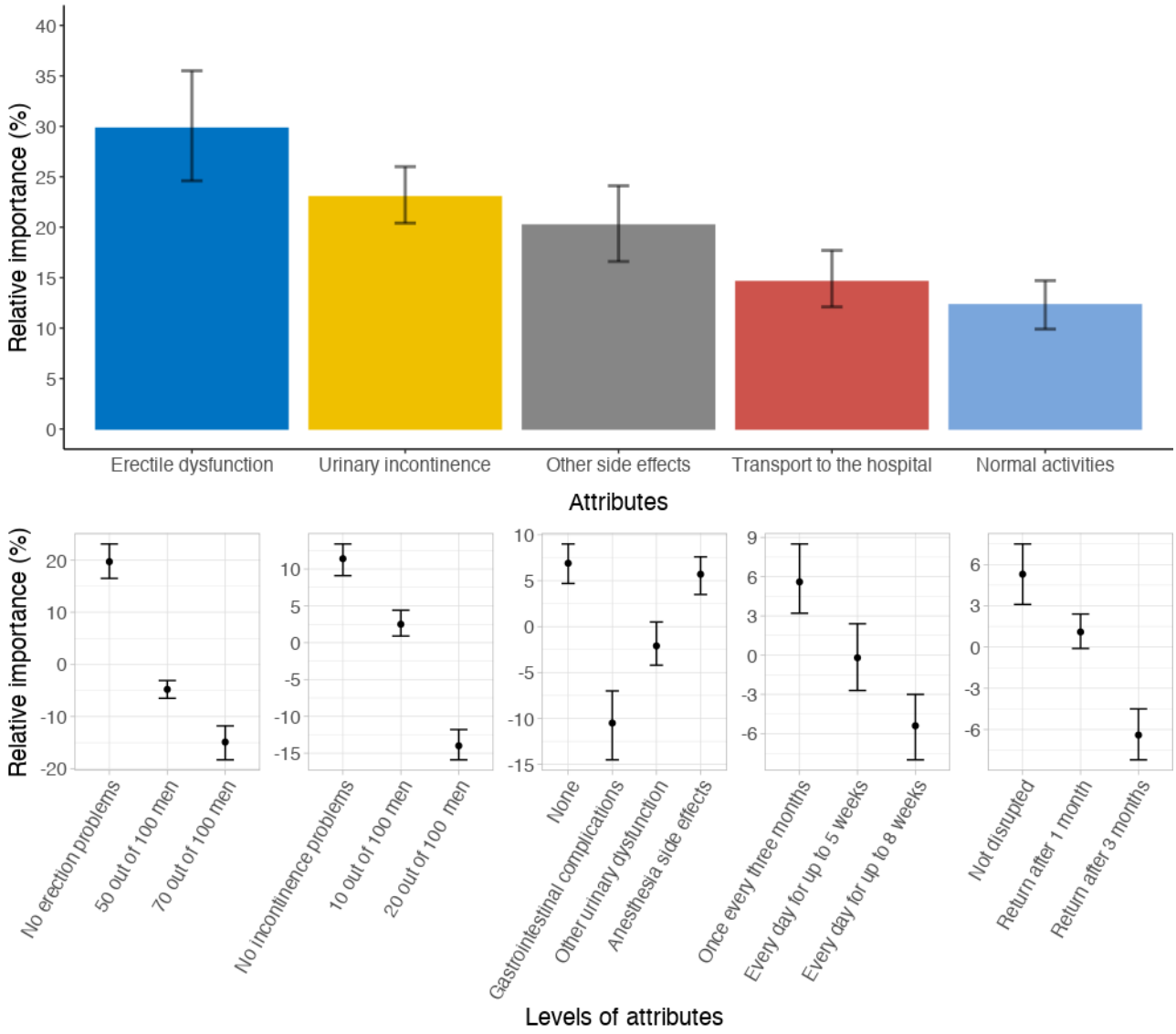

Fig. 4: The relative importance of BWS attributes; relative importance of BWS levels, and their 95% confidence intervals.

Comparison of DCE a BWS

In Table 3 , the results of evaluating both methods in terms of difficulty and satisfaction of respondents are shown. The DCE method was rated as less difficult, with a mean score of 2.9 (95% CI, from 2.5 to 3.3), and respondents were generally satisfied with it, with a mean score of 3.5 (95% CI, from 3.2 to 3.8). The BWS method was rated as more demanding with a mean score of 3.6 (95% CI, from 3.1 to 3.9), and respondents generally held a neutral attitude towards satisfaction, with a mean score of 3.1 (95% CI, from 2.8 to 3.4).

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Table 3: Patients rated the difficulty and satisfaction with the preference assessment method.

Method's characteristics	DCE (-)	BWS (-)
Difficulty		
average	2.9 (2.5–3.3)	3.6 (3.1–3.9)
median	3.0 (2.0–4.0)	4.0 (3.0–4.0)
modus	2.0 (2.0–4.0)	4.0 (2.0–5.0)
SD	1.1 (0.9–1.3)	1.2 (0.9–1.4)
Satisfaction		
average	3.5 (3.2–3.8)	3.1 (2.8–3.4)
median	4.0 (3.0–4.0)	3.0 (3.0–4.0)
modus	4.0 (3.0–4.0)	3.0 (4.0–5.0)
SD	0.9 (0.7–1.0)	0.9 (0.7–1.0)

Difficulty of the method: 1—Not difficult at all; 5—Very difficult. **Satisfaction with the method for expressing preferences:** 1—I would not be satisfied with this method at all; 5—I would be very satisfied with this method. SD—standard deviation.

Discussion

The main finding of this study is that the most important factors for patients with localized prostate cancer are the risk of erectile dysfunction and urinary incontinence, with both preference assessment methods, DCE and BWS, providing consistent results regarding these preferences.

As studies Sidana et al. and Ihrig et al. [17, 18], focusing on patient preferences for localized prostate cancer have shown, one of the most important factors in treatment selection can be a doctor's recommendation for treatment. For this reason, it is very important to consider patient preferences and include them not only in individual shared decision-making about the patient's treatment but also in decision-making in the entire healthcare sector.

Our study's conclusions demonstrate that the most important treatment attributes for patients with localized prostate cancer are erectile dysfunction, urinary incontinence, and other side effects, particularly intestinal issues. The preference results are consistent in this regard for both the DCE and BWS methods. The preference results differ by 6.2% between the methods. In both cases, patients preferred the absence of problems in this area, and with worsening attribute levels, their efforts to avoid the level increased. Commuting to the hospital and returning to normal activities did not have a significant impact on the choice of hypothetical scenarios.

Urinary incontinence was rated by patients in our study as the second most significant attribute for both patient preference assessment methods. This rating is consistent with the results of a 2019 Kaplan et al. study [10]. However, our results differ from the attribute rankings in studies from de Bekker-Grob et al. and Watson et al. [11, 15], where the attribute of urinary incontinence was more important to patients than the erectile dysfunction. One should keep in mind that attribute importance based on level ranges is always conditional on the levels chosen. Attribute importance may differ across studies, depending on the level selection of the same attribute in different studies [19]. Deviations concerning the preference for erectile (dys)function between our pilot study and the above-mentioned studies may be caused by various factors such as a healthy lifestyle and family status of respondents (respectively, marital relationships), but especially whether the respondent already had problems in the sexual area before the diagnosis and how extensive these problems were. A 2010 Lindau et al. study [20] investigated the expected length of sexual life in men in the USA. The result was that the expected length of sexually active life for men aged 55 was 15 years depending on health, with 38.9% of respondents aged 75–80 still being sexually active. Thus, sexual life can be one of the significant factors influencing decisions about treatment options. Another possible reason influencing the final ranking of these two attributes may be the setting of attribute levels, where patients might have been more willing to undergo a lower risk of urinary incontinence compared to a significantly higher risk of erectile dysfunction.

The attribute of side effects was rated by patients as the third most important using both methods used in our study, with specific values not significantly statistically different between the methods we used. Patients most wanted to avoid intestinal issues. In Kaplan et al. study [10], the attribute of intestinal issues was the most important for 8% of respondents using the BWS Type 3 method, yet preference for this attribute by the same respondents using the other two methods (rating scales and Time trade off) used in this study was only 3%.

Transport to the hospital was a less important factor for patients but was still not the least important. The attribute of returning to normal activities was the least important based on the results received. Lower preference for this attribute may be due to the fact that, according to sociodemographic questions, most of these respondents are in retirement age. Even for this attribute, the ranking is consistent when using both methods, and the relative importance score also differs between methods only by 4%.

The attribute rankings agreed when using both methods, meaning that although the 95% confidence intervals for attributes indicate that specific preference values for some attributes may significantly differ depending on the method used, we can still say which attributes influenced our sample of respondents when choosing hypothetical treatment and how much.

It cannot be definitively said what causes the differences in results between the DCE and BWS methods. However, we can speculate that the differences may also be caused by the different number of hypothetical scenarios in the methods and thus

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a different amount of offered variants. Also, the fact that the level combinations in the scenarios are different each time, and every respondent has to make a different compromise in each scenario, might contribute to this. Additionally, study Xie et al. [21] offers an unconfirmed finding that while the DCE method is more reliable and the accuracy of preference estimation may increase with a larger sample, a smaller sample of respondents is sufficient for estimating preferences using the BWS Type 3 method. Nor does this study confirm or refute this finding, as it is beyond the scope of the pilot study goals.

The Discrete Choice Experiment method was generally rated better by patients, both in terms of difficulty and satisfaction, but the evaluation of the Best-Worst Scaling Type 3 also indicates that patients were quite satisfied with expressing their preferences by this method too.

The pilot study has several limitations that should be considered when interpreting the results. First, the sample size was relatively small, which may limit the generalizability of the findings to the broader population of patients with localized prostate cancer. Additionally, selection bias due to recruiting respondents from a limited number of healthcare facilities may have influenced the sample composition, limiting the applicability of the results to other populations. The study also explored patient preferences using selected attributes and levels, so it is important to emphasize that not all attributes and levels that may be relevant and influence patient decision-making are considered. It is therefore appropriate to conduct studies evaluating preferences on larger samples of respondents and incorporate the results of these studies into personalized treatment decisions for patients. Lastly, the study does not include the looking at the age groups would be able to provide more detailed insight into the needs of patients and make it possible to tailor treatments to specific age groups.

Conclusion

This study found that the risk of erectile dysfunction and urinary incontinence are the primary factors influencing treatment decisions among patients with localized prostate cancer. The DCE and BWS methods proved to be suitable tools for quantitatively measuring patient preferences, with the DCE method rated by patients as less demanding and resulting in higher satisfaction. These findings may contribute to a better understanding of patient preferences and support personalized approaches in treatment selection, which is essential for improving care quality and patient satisfaction.

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References

[1] OECD/European Union (2020). Health at a Glance: Europe 2020: State of Health in the EU Cycle. Paris: OECD; 2020. DOI: 10.1787/82129230-en

[2] Krejčí D, Mužík J, Šnábl I, Gregor J, Komenda M, Dušek L. Portál epidemiologie novotvarů v ČR [Internet]. Brno: Masarykova univerzita; 2024 [cited 2024 Oct 25]. Available from: https://www.svod.cz/incidence-mortalita

[3] Bouvy JC, Cowie L, Lovett R, Morrison D, Livingstone H, Crabb N. Use of Patient Preference Studies in HTA Decision Making: A NICE Perspective. The Patient - Patient-Centered Outcomes Research. 2020;13(2):145–9. DOI: 10.1007/s40271-019-00408-4

[4] Gärtner FR, Portielje JE, Langendam M, Hairwassers D, Agoritsas T, Gijsen B, et al. Role of patient preferences in clinical practice guidelines: a multiple methods study using guidelines from oncology as a case. BMJ Open. 2019;9(12):e032483. DOI: 10.1136/bmjopen-2019-032483

[5] Stiggelbout AM, De Haes JC. Patient Preference for Cancer Therapy: An Overview of Measurement Approaches. Journal of Clinical Oncology. 2001;19(1):220–30. DOI: 10.1200/JCO.2001.19.1.220

[6] Marsh K. Patient Preferences in Health Technology Assessment in Europe: Recent Advances and Future Potential. Fall 2019, The Evidence Forum [Internet]. 2019;45–8. [cited 2024 Oct 25]. Available from: https://www.evidera.com/patient-preferences-in-health-technology-assessment-in-europe-recent-advances-and-future-potential/

[7] Marsh K, van Til JA, Molsen-David E, Juhnke C, Hawken N, Oehrlein EM, et al. Health Preference Research in Europe: A Review of Its Use in Marketing Authorization, Reimbursement, and Pricing Decisions—Report of the ISPOR Stated Preference Research Special Interest Group. Value in Health. 2020;23(7):831–41. DOI: 10.1016/j.jval.2019.11.009

[8] Donin G, Erfányuková A, Ivlev I. Factors Affecting Young Adults' Decision Making to Undergo COVID-19 Vaccination: A Patient Preference Study. Vaccines. 2022;10(2):265. DOI: 10.3390/vaccines10020265

[9] Lancsar E, Louviere J. Conducting Discrete Choice Experiments to Inform Healthcare Decision Making: a user´s guide. Pharmacoeconomics. 2008;26(8):661–77. DOI: 10.2165/00019053-200826080-00004

[10] Kaplan RM, Crespi CM, Dahan E, Saucedo JD, Pagan C, Saigal CS. Comparison of Rating Scale, Time Tradeoff, and Conjoint Analysis Methods for Assessment of Preferences in Prostate Cancer. Medical Decision Making. 2019;39(7):816–26. DOI: 10.1177/0272989X19873667

[11] Watson V, McCartan N, Krucien N, Abu V, Ikenwilo D, Emberton M, et al. Evaluating the Trade-Offs Men with Localized Prostate Cancer Make between the Risks and Benefits of Treatments: The COMPARE Study. The Journal of Urology. 2020;204(2):273–80. DOI: 10.1097/JU.0000000000000754

[12] Ávila M, Becerra V, Guedea F, Suárez JF, Fernandez P, Macías V, et al. Estimating Preferences for Treatments in Patients With Localized Prostate Cancer. International Journal of Radiation Oncology*Biology*Physics. 2015;91(2):277–87. DOI: 10.1016/j.ijrobp.2014.09.044

[13] Mishra MV, Thayer WM, Janssen E, Hoppe B, Eggleston C, Bridges JF. Patient preferences for reducing bowel adverse events following prostate radiotherapy. PLOS ONE. 2020;15(7):e0235616. DOI: 10.1371/journal.pone.0235616

[14] Tentori K, Pighin S, Divan C, Crupi V. Mind the gap: Physicians' assessment of patients' importance weights in localized prostate cancer. PLOS ONE. 2018;13(7):e0200780. DOI: 10.1371/journal.pone.0200780

[15] de Bekker-Grob EW, Bliemer MC, Donkers B, Essink-Bot ML, Korfage IJ, Roobol MJ, et al. Patients' and urologists' preferences for prostate cancer treatment: a discrete choice experiment. British Journal of Cancer. 2013;109(3):633–40. DOI: 10.1038/bjc.2013.370

[16] MaxDiff Analysis - Conjointly [Internet]. Sydney: Analytics Simplified Pty Ltd. 2024 [cited 2024 May 7]. Available from: https://conjointly.com/products/maxdiff-analysis/

[17] Sidana A, Hernandez DJ, Feng Z, Partin AW, Trock BJ, Saha S, et al. Treatment decision-making for localized prostate cancer: what younger men choose and why. Prostate. 2012;72(1):58–64. DOI: 10.1002/pros.21406

[18] Ihrig A, Keller M, Hartmann M, Debus J, Pfitzenmaier J, Hadaschik B, et al. Treatment decision-making in localized prostate cancer: why patients chose either radical prostatectomy or external beam radiation therapy. BJU International. 2011;108(8):1274–8. DOI: 10.1111/j.1464-410X.2011.10082.x

[19] Bien DR, Danner M, Vennedey V, Civello D, Evers SM, Hiligsmann M. Patients' Preferences for Outcome, Process and Cost Attributes in Cancer Treatment: A Systematic Review of Discrete Choice Experiments. The Patient-Patient-Centered Outcomes Research. 2017;10(5):553–65. DOI: 10.1007/s40271-017-0235-y

[20] Lindau ST, Gavrilova N. Sex, health, and years of sexually active life gained due to good health: evidence from two US population based cross sectional surveys of ageing. BMJ. 2010;340:c810. DOI: 10.1136/bmj.c810

[21] Xie F, Pullenayegum E, Gaebel K, Oppe M, Krabbe PF. Eliciting preferences to the EQ-5D-5L health states: discrete choice experiment or multiprofile case of best–worst scaling? The European Journal of Health Economics. 2014;15(3): 281–8. DOI: 10.1007/s10198-013-0474-3

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