BMJ Open

Patient preferences for stress urinary incontinence treatments: a discrete choice experiment

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To cite: Boyers D, Kilonzo M, Davidson T, *et al*. Patient preferences for stress urinary incontinence treatments: a discrete choice experiment. *BMJ Open* 2023;**13**:e066157. doi:10.1136/bmjopen-2022-066157

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2022-066157).

Received 18 July 2022
Accepted 28 April 2023

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ABSTRACT

Objectives To elicit and value patient preferences for the processes and outcomes of surgical management of stress urinary incontinence in women.

Design A discrete choice experiment survey to elicit preferences for type of anaesthesia, postoperative recovery time, treatment success, adverse events, impact on daily activities and cost. An experimental design generated 40 choice tasks, and each respondent completed 1 block of 10 and 2 validity tests. Analysis was by multinomial logistical regression.

Setting N=21 UK hospitals.

Participants N=325 adult women who were a subsample of those randomised to the single-incision mini-slings clinical trial.

Outcomes Patient preferences; valuation obtained using willingness to pay.

Results N=227 of 325 (70%) returned a questionnaire, and 94% of those completed all choice tasks. Respondents preferred general anaesthesia, shorter recovery times, improved stress urinary incontinence symptoms and avoidance of adverse events. Women were willing to pay (mean (95% CI)) £76 (£33 to £119) per day of reduction in recovery time following surgery. They valued increases in Patient Global Impression of Improvement, ranging from £8173 (£5459 to £10 887) for 'improved' to £11 706 (£8267 to £15 144) for 'very much improved' symptoms, compared with no symptom improvement. This was offset by negative values attached to the avoidance of complications ranging between £−8022 (£−10 661 to £−5383) and £−10 632 (£−14 077 to £−7187) compared to no complications. Women valued treatments that reduced the need to avoid daily activities, with willingness to pay ranging from £−967 (£−2199 to £266) for rarely avoiding activities to £−5338 (£−7258 to £−3417) for frequently avoiding daily activities compared with no avoidance.

Conclusion This discrete choice experiment demonstrates that patients place considerable value on improvement in stress urinary incontinence symptoms and avoidance of treatment complications. Trade-offs between symptom improvement and adverse event risk should be considered within shared decision-making. The willingness to pay values from this study can be used in future cost–benefit analyses.

Trial registration number ISRCTN: 93264234; Post-results.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ We use a discrete choice experiment (DCE) survey to elicit women's preferences for the surgical management of stress urinary incontinence.
⇒ The DCE was designed based on rigorous methodology including extensive piloting of the survey.
⇒ This DCE enables an assessment of the benefit–risk trade-offs that women are willing to make between symptom improvement and adverse events, and is useful for shared decision-making.
⇒ The DCE included a cost attribute which enables calculation of willingness to pay values that can be used in service valuation and cost–benefit analysis.
⇒ Our sample comprises women taking part in a trial, who have experience of receiving surgery for stress urinary incontinence, and we cannot guarantee that their preferences are generalisable more broadly.

INTRODUCTION

Synthetic mid-urethral slings (SMUS) are widely considered to be the standard surgical treatment for female stress urinary incontinence (SUI) worldwide. Newer, adjustable, anchored single-incision mini-slings (SIMS) use less mesh and are designed to reduce perioperative morbidity. The SIMS Study was a pragmatic multicentre randomised controlled trial that compared the clinical and cost-effectiveness of SIMS with SMUS in the surgical management of female SUI with 3-year follow-up. Full details of the SIMS Study's clinical effectiveness results are available elsewhere,[1] but in brief found that over 3 years of follow-up, SIMS were clinically non-inferior to SMUS according to the primary Patient Global Impression of Improvement (PGI-I) outcome, with no evidence of differences in quality-of-life outcomes. SIMS had less immediate postoperative pain, but higher rates of dyspareunia and further surgery. There was no clear surgery type that was most cost-effective. Further long-term follow-up is ongoing.

Cost-effectiveness analyses provide vital information on value for money to policymakers, seeking to maximise health outcomes. However, the usual framework, cost-utility analysis, based on quality-adjusted life years (QALYs), does not explicitly consider patient preference for the most important attributes of treatment, such as symptom improvement or adverse event risk. Gaining a more complete understanding of patient preference is essential to ensure the delivery of patient-centred healthcare services that are clinically and cost-effective.[2] This is particularly important in cases such as the SIMS trial, where neither treatment option is clearly optimal over the other in terms of either clinical outcomes or cost-effectiveness. In such cases, patients may need to make trade-offs between the process of care, such as type of anaesthesia and non-health outcomes, such as time taken to return to usual activities. These issues may be important considerations for shared decision-making.

Discrete choice experiments (DCEs) are survey-based methods that are widely used to elicit patient preferences for healthcare services.[3] This paper describes the design, analysis and results of a DCE, completed by SIMS trial participants, to elicit preferences for the processes and outcomes of surgical treatment of SUI.

Study design and methods

DCEs are grounded in the economic theory of preferences. They assume that the utility (value) of any good or service can be described by the value attributed to that service's specific components, referred to as attributes.[4] In the context of surgical treatment for SUI, respondents might have preferences for, and value, shorter recovery times, less SUI symptoms and avoidance of adverse events. These are the attributes that vary in terms of levels (eg, severity, type of adverse event). In DCE surveys, respondents answer multiple choice tasks, where they choose their preferred service configuration, from two or more alternatives, that maximises their utility (level of satisfaction). By observing the respondent's choices over several choice tasks, we can estimate respondent preferences for different service configurations. When a cost attribute is included, willingness to pay (WTP) for different service configurations can be calculated; any service configuration that is based on the attributes and levels in the DCE can be valued and results can be used in cost–benefit analyses.[3 5] For this study, we chose to elicit preferences from participants partaking in the SIMS Study because they had experience of surgery for SUI. Obtaining the data from trial participants is also advantageous because it ensures that costs and benefits are elicited from the same source.

Selection of attributes and levels for the DCE

DCE attributes and levels were selected using a combination of literature review, and engagement with clinical and patient representatives on the study team. The initial set of attributes and levels considered for inclusion in the DCE was chosen from the list of clinical and patient-centred outcomes to be collected in the trial. At this point, the validated Patient Global Impression of Improvement (PGI-I) and complications were identified as two key attributes for inclusion. A scoping review of the literature was then conducted to identify additional processes and outcomes that may be important to patients. At this point, 'type of anaesthesia', and the secondary trial outcomes of 'recovery time' and 'impact on daily activities' were added to the attribute set. A cost attribute was added to enable calculation of WTP to value packages of care and to inform future cost–benefit analyses.

The DCE was drafted and revised using an iterative approach to ensure that the choices presented included attributes and levels that were realistic, tradable, meaningful to patients and clinically relevant. The process of attribute and level selection involved several meetings of the trial team, including clinical and patient experts to determine if any important attributes were missing, and to specify or refine attribute levels or descriptions where necessary. At this point, the most common and patient important complications were selected as levels for the complications attribute. Risk of further surgery was considered as a complication, but while important, was not included as a level in the DCE because it was felt that risk of future surgery would be closely correlated with either the PGI-I measure of treatment effectiveness or surgery for adverse events such as mesh extrusion/erosion. Description of the mesh extrusion/erosion

Table 1 DCE attributes and levels

Attribute	Levels
Type of anaesthesia	Local General
Post-surgery complications	New-onset urgency urinary incontinence, Intermittent self-catheterisation, Dyspareunia Mesh extrusion/exposure None
Post-surgery number of recovery days	3 13 23 33
Level of improvement in incontinence symptoms after surgery (PGI-I)	Very much improved Much improved Improved None
Avoid activities due to a fear of urine leakage	Frequently Occasionally Rarely Never
Cost of treatment	£1000 £2000 £3500 £5000

DCE, discrete choice experiment.

complication therefore specifically noted that further surgery may be required to resolve problems.

The levels of the cost attribute were selected with the aim of ensuring an upper bound of cost that might sufficiently capture the maximum amount that a participant may be willing to pay for the best possible package of care. Several cost attributes were higher than the price typically paid for SUI surgery in the private market and were deemed sufficient to ensure trading of cost against other attributes. The team raised a concern around the hypothetical nature of the valuation task, in particular, raising concerns that respondents would not be expected to pay for surgical SUI care in UK clinical practice. We therefore added the following text to the description of the cost attribute to encourage engagement and provide reassurance: 'We know that you do not have to pay for National Health Service treatment, but please imagine a scenario where you do. Think about how much each treatment would be worth to you, and whether you would be able and willing to pay for it.' The final list of DCE attributes and levels is summarised in table 1.

Experimental design

The DCE had six attributes, (1×2 levels, 4×4 levels, 1×5 levels), meaning that there are $(2^1 \times 4^4 \times 5^1)=2560$ different potential combinations of attributes and levels in an unrestricted full factorial design, with over 3 million possible choice sets. A main-effects d-optimal experimental design, with 40 choice tasks, was developed using NGENE experimental design software[6] (see online supplemental appendix 1 for the experimental design code). The choice tasks were split into 4 blocks of 10 choice tasks to reduce respondent burden. Two further choice tasks were added to each block, with one warm-up task and one repeated choice task as a consistency check. Respondents therefore completed 1 block of 12 choice tasks each.

Each choice task asked respondents to choose between two different surgical procedures, labelled 'treatment A' and 'treatment B' and an opt-out alternative, labelled 'no treatment'. The opt-out alternative consisted of no surgery, no improvement in symptoms and no surgical-related complications, with occasional avoidance of activities due to a fear of leaking and £0 cost. An example choice task is provided in figure 1.

The final design was revised using fixed priors for complications and level of symptom improvement, obtained from a pilot survey completed by 90 SIMS trial participants. Two additional restrictions were added to improve choice task realism. The restrictions prevented respondents from being presented with 'symptoms: very much improved' in combination with either 'complications: intermittent self-catheterisation' or 'avoid activities: frequently' as these combinations were not deemed plausible. Given the amendments to the experimental design, pilot data were not used in the main analysis. Pilot participants were not re-approached for completion of the main survey.

Questionnaire design

There were three sections in the questionnaire. Section one provided introductory materials and guidance on how to complete the survey. This included questions to encourage respondents to think about the attributes they would make choices about in the DCE, such as reporting

Choice 9: Which option would you choose?

	Treatment A	Treatment B	No Treatment
Type of anaesthetic	General	Local	None
Type of complication	Intermittent catheterisation	None	None
Number of recovery days	3	13	0
Level of improvement	Improved	Very much improved	None
Avoid activities due to fear of leaking	Frequently	Never	Occasionally
Cost to you	£2,000	£5,000	£0

Which treatment would you choose (tick one box only)?	Treatment A	Treatment B	No Treatment
	☐	☐	☐

Figure 1 Example choice task.

any complications, recovery time and rating the acceptability of different levels of improvement on the PGI-I. Respondents were then asked to imagine a baseline reference scenario when completing the choice tasks, described as:

> You leak a moderate amount of urine several times a day. You leak when you cough, sneeze or are physically active. Your urinary problem causes you to occasionally avoid activities due to fear of leaking. You always use pads to keep dry from your stress urinary incontinence.

Section two described the DCE and provided a completed example choice task. Respondents then proceeded to complete 12 choice tasks each. Immediately following the choice tasks, respondents were asked to agree or disagree (on a 5-point scale ranging from 'strongly disagree' to 'strongly agree') with six statements describing their experience of the DCE survey in terms of understanding, level of information provided, relevance, plausibility, complexity and clarity.

Section three asked demographic questions to help understand the representativeness of the sample, contextualise the results and explore the impact of demographics on preferences. The full survey, including all instructions provided to participants, descriptions of attribute levels and the DCE choice tasks, is included as online supplemental materials.

Participant sample

The final version of the survey was mailed to SIMS Study participants after completion of the 3-year trial follow-up questionnaire. One reminder was sent to encourage survey completion. The main survey post-pilot was sent to N=325 participants, of whom N=227 (70%) returned a questionnaire. The required sample size for a DCE survey cannot be determined a priori, because such a calculation requires advanced knowledge about the final experimental design, including information on the number of attributes and levels, the number of choice tasks and the number of choice task alternatives. However, using a 'rule of thumb' calculation proposed by Johnson and Orme,[7] the absolute minimum number of main effect level representations in the DCE should be at least 500, given by the expression $nta/c \geq 500$, where n=227 is the number of respondents, t=10 is the number of tasks per respondent, a=2 is the number of alternatives per task, excluding the opt-out alternative, and c=5, for a main-effects design, is the largest number of levels for any one attribute in the design. Using the rule of thumb equation, the number of representations of each attribute level in our DCE is 908. This means that the estimation sample (N=227) satisfies the minimum specified requirement.

Data analysis

Data were entered onto a database by experienced members of the SIMS Study team. Data were anonymised using the SIMS Study number and personal identifiable information was not available to the analysts. DCE responses were analysed under a random utility theory framework[8] where each survey respondent (n) chooses their preferred treatment package (j) in each of the 10 different choice tasks (t). Data were analysed using conditional and mixed logistical regression models, allowing for multiple choices per respondent, to estimate the relative importance of the included attributes and levels.[9] The observable component of the utility function (V_{njt}) is a linear additive function of the DCE attributes and levels, where:

$$V_{njt} = \alpha + \beta_1 Anaesthetic_{general} + \beta_2 Complication_{urge\ incontinence} + \beta_3 Complication_{catheterisation} + \beta_4 Complication_{dyspareunia} + \beta_5 Complication_{mesh\ extrusion\ or\ erosion} + \beta_6 Return\ to\ usual\ activities_{days} + \beta_7 Symptoms_{very\ much\ improved} + \beta_8 Symptoms_{much\ improved} + \beta_9 Symptoms_{improved} + beta_{10} Avoid\ activities_{rarely} + \beta_{11} Avoid\ activities_{occasionally} + \beta_{12} Avoid\ activities_{frequently} + \beta_{13} Cost_{total}$$

The alternative specific constant represented by α, describes the latent utility associated with choosing any surgical treatment package compared with none (ie, opting into surgical treatment, where all other attribute levels are held at their reference level). Type of anaesthetic (reference category: local), complication (reference category: none), symptoms (reference category: no improvement) and avoidance of activities (reference category: never) are categorical variables, where the set of β parameters represents the marginal utility of each dummy coded attribute level compared with the reference category. Time to return to pre-surgery usual activities and cost are continuous variables, where β_6 and β_{13} describe the impact on utility of a 1-day reduction in time to return to usual activities and a £1 increase in cost, respectively.

Four different DCE models were estimated to assess the robustness of our findings to different modelling assumptions. M1, M2 and M3 are conditional logit (no random parameters), errors component logit (random alternative specific constant) and random parameters logit (all random except cost, with a normal distribution) models respectively. Adding random parameters to the model allows an assessment of the statistical significance of the SD. Significant SDs may indicate preference heterogeneity among the respondent sample. M3 was chosen as our base case model because it provided the best (lower values indicate better model fit) average Akaike Information Criterion/Bayesian Information Criterion score. M4 re-analysed the random parameters logit model, but with the inclusion of several interaction terms between preferences for: (1) type of anaesthesia interacted with type received in the SIMS trial; (2) avoidance of complications interacted with whether the respondent had complications as stated in the DCE survey and (3) the decision to have surgery (represented by the alternative specific constant) interacted with type of anaesthesia received and experience of complications. All analysis models were estimated using Stata V.14.

The estimated utility parameters from M1 through M4 describe the impact on utility, but to compare changes in all attributes in a single unit, it is necessary to calculate marginal rates of substitution between each attribute level (β_k) and the cost attribute (β_{13}) to estimate marginal WTP, calculated as:

$$Marginal\ WTP = -\frac{\beta_k}{\beta_{13}}$$

Analysis of data quality and perceptions of the DCE survey

As described in the questionnaire design, respondents were asked to agree or disagree on a 5-point scale with six statements about the survey content, asking about perceptions of survey complexity, learning through the survey, plausibility, relevance to policy, level of information provided and clarity of the choice tasks. These data are tabulated and plotted graphically for illustration of the results.

Patient and public involvement

A patient and public representative provided comments and critical review of draft versions of the questionnaire and is an author on this paper.

RESULTS

The final version of the DCE was sent to 325 of 596 (55%) SIMS Study participants, who had surgery as part of the trial and who had not previously been invited to take part in the pilot DCE. N=227 of 325 (70%) of those returned a questionnaire, and the choice task completion rate was 94%.

Sample characteristics

Table 2 shows that the DCE estimation sample was broadly similar to those of the full SIMS trial cohort, providing reassurance that the DCE sample is a good representation of trial participants.

Preferences for treatments and WTP

Tables 3 and 4 report the DCE model and WTP results, respectively. Findings were consistent across the models. The base case model (M3) showed that women preferred surgical treatment to none. General anaesthesia was preferred to local anaesthesia, particularly for those who had experienced general anaesthesia as part of the trial. Women prefer shorter recovery time and are willing to pay £76 per day of reduced recovery time following surgery. Women attach the greatest value to achieving improvement in their urinary incontinence symptoms and the avoidance of complications. Complications with the greatest negative impact on utility were the need for intermittent self-catheterisation and the experience of mesh exposure, though avoidance of dyspareunia and new-onset urgency incontinence was also valued. Women placed an approximately equal value to achieving an outcome of 'very much improved' and avoiding the need for intermittent self-catheterisation or experiencing mesh exposure, suggesting that the gains in utility achieved from better outcomes would be almost completely offset if women experienced these complications. Women did not have a statistically significant preference against treatments where they would only rarely have to avoid their usual activities compared with never having to avoid activities. However, negative statistically significant willingness to pay values show that women highly value treatments that reduce the impact of SUI on their need to avoid usual activities occasionally or frequently due to a fear of leaking.

Table 2 DCE estimation sample characteristics

	DCE estimation sample N=227	Trial population N=596
Characteristics	n (%)	n (%)
Randomised group		
SIMS	113 (49.8)	298 (50)
SMUS	114 (50.2)	298 (50)
Pelvic floor muscle training in the last 2 years		
Yes	190 (83.7)	508 (85)
No	37 (16.3)	88 (15)
Type of anaesthesia		
General	133 (59)	308 (52)
Spinal	9 (4)	12 (2)
Local	83 (36)	217 (37)
None*	0 (0)	59 (10)
Education†		
Standard grades	141 (62.1)	N/A
Apprenticeship	65 (28.6)	N/A
Higher	40 (17.6)	N/A
Degree	63 (27.8)	N/A
None or missing	32 (14.1)	N/A
Income category		
Low	58 (26)	N/A
Moderate	72 (32)	N/A
High	40 (18)	N/A
Prefer not to say or missing	57 (25)	N/A
Demographic/clinical characteristic	**Mean (SD)**	**Mean (SD)**
Age	51 (10)	51 (11)
Baseline EQ-5D-3L utility score	0.838 (0.237)	0.847 (0.226)

Income data were not collected for the trial population at baseline and were only collected for the DCE estimation sample.
*Note that 'none' refers to patients within the trial who did not have surgery.
†Respondents could tick more than one option.
DCE, discrete choice experiment; N/A, not available; SIMS, single-incision mini-slings; SMUS, synthetic mid-urethral slings.

Table 3 Estimated DCE model results

	M1		M2		M3		M4	
	Mean*	SE	Mean*	SE	Mean*	SE	Mean*	SE
Main effects†								
Alternative specific constant	0.6365***	0.16	1.3131***	0.25	1.3071***	0.27	1.4606***	0.40
Anaesthetic: general	0.3091***	0.06	0.3219***	0.07	0.3728***	0.11	0.1011	0.19
Complications: urgency incontinence	−1.0111***	0.11	−1.4026***	0.13	−1.8327***	0.18	−2.0185***	0.26
Complications: self-catheterisation	−1.4819***	0.11	−1.6853***	0.13	−2.4289***	0.21	−2.6814***	0.31
Complications: dyspareunia	−1.0440***	0.11	−1.4457***	0.13	−1.8568***	0.19	−1.7385***	0.23
Complications: extrusion or exposure	−1.3482***	0.11	−1.5821***	0.12	−2.3648***	0.22	−2.0391***	0.23
Return to normal activities (days)	−0.0121***	<0.01	−0.0146***	<0.01	−0.0173***	<0.01	−0.0183***	<0.01
Symptoms: very much improved	1.6018***	0.12	1.9800***	0.14	2.6742***	0.19	2.7344***	0.19
Symptoms: much improved	1.3439***	0.11	1.6729***	0.14	2.2584***	0.18	2.3624***	0.19
Symptoms: improved	1.0789***	0.12	1.4246***	0.15	1.8672***	0.18	1.8949***	0.20
Avoid activities: rarely	−0.0953	0.10	−0.1717	0.10	−0.2208	0.14	−0.2096	0.14
Avoid activities: occasionally	−0.2920**	0.10	−0.3257**	0.10	−0.4526**	0.15	−0.5200***	0.15
Avoid activities: frequently	−0.7770***	0.11	−0.8559***	0.12	−1.2194***	0.17	−1.3454***	0.19
Cost	−0.0002***	<0.01	−0.0002***	<0.01	−0.0002***	<0.01	−0.0003***	<0.01
Interaction effects								
Alternative specific constant×received GA							−0.2689	0.34
Alternative specific constant×experienced complications							0.0023	0.47
Anaesthetic GA×received GA							0.7638**	0.24
Complications: urgency incontinence×experience complications							0.3532	0.37
Complications: self-catheterisation×experience complications							0.2998	0.39
Complications: dyspareunia×experience complications							−0.5126	0.35
Complications: extrusion or exposure×experience complications							−0.668	0.40
SD‡								
Main effects†								
Alternative specific constant			2.3043***	0.19	2.4013***	0.20	1.9802***	0.22
Anaesthetic: general					1.0257***	0.13	1.3242***	0.14
Complications: urgency incontinence					0.9815***	0.23	1.3979***	0.29
Complications: self-catheterisation					1.4458***	0.24	1.6473***	0.25
Complications: dyspareunia					1.1548***	0.27	−0.4792	0.28
Complications: extrusion or exposure					1.6333***	0.23	0.8296**	0.27
Return to normal activities (days)					0.0067	0.01	0.0053	0.01
Symptoms: very much improved					−0.9451***	0.19	0.6883***	0.20
Symptoms: much improved					0.2192	0.32	0.0251	0.28
Symptoms: improved					0.2446	0.24	1.0480***	0.21
Avoid activities: rarely					−0.1474	0.17	0.0733	0.17
Avoid activities: occasionally					0.208	0.14	−0.028	0.18
Avoid activities: frequently					0.7906**	0.26	0.8378***	0.25
Interactions								
Alternative specific constant×received GA							0.8163	0.58
Alternative specific constant×experienced complications							2.1947***	0.28
Anaesthetic GA×received GA							0.3193	0.20
Complications: urgency incontinence×experience complications							0.4845*	0.25
Complications: self-catheterisation×experience complications							−0.1122	0.27

Continued

Table 3 Continued

	M1	M2	M3	M4	
Complications: dyspareunia×experience complications				1.0393**	0.33
Complications: extrusion or exposure×experience complications				2.4506***	0.43
Model fit					
Log likelihood					
AIC	3863.1	3361.2	3218.3	3209.5	
BIC	3957.7	3462.6	3400.9	3486.7	
N (observations)	6390	6390	6390	6390	

*P<0.05, **p<0.01, ***p<0.001.
M1: conditional logit model; M2: error components model; M3: random parameters model; M4: random parameters model with interactions.
*Coefficients represent log odds, rather than ORs, to enable easy manipulation to calculate marginal rates of substitution (willingness to pay). Results are reported to four decimal places to ensure accuracy in calculation of willingness to pay.
†The reference categories are: alternative specific constant opt out, local anaesthesia, no complications, no improvement in symptoms and never avoid activities due to fear of leaking.
‡The sign of the estimated SD is meaningless and should be interpreted as positive.
AIC, Akaike Information Criterion; BIC, Bayesian Information Criterion; DCE, discrete choice experiment; GA, general anaesthesia.

Assessment of data quality and views on the survey

Figure 2 shows that respondents mostly understood the concept of choosing between choice tasks (agree or strongly agree). Most felt that the treatment options made sense and that their responses would have an impact on the future availability of treatments, but 23% reported that the choice tasks were confusing, and half felt that they needed more information to inform their decision-making. While the proportion appears low, there is a trade-off between the volume of materials in the survey required to provide complete information and survey complexity. Most felt that the process became easier after the first few choice tasks, demonstrating learning during the

Table 4 WTP estimates from the DCE models

	M1	M2	M3	M4
WTP for*	**Mean (95% CI)†**	**Mean (95% CI)†**	**Mean (95% CI)†**	**Mean (95% CI)†**
Alternative specific constant	£3703 (£2008 to £5397)	£7143 (£4356 to £9931)	£5721 (£3309 to £8134)	£5473 (£2501 to £8445)
Anaesthetic: general	£1798 (£958 to £2637)	£1751 (£932 to £2570)	£1632 (£610 to £2653)	£379 (£−979 to £1736)
Complications: urgency incontinence	£−5881 (£−7909 to £−3853)	£−7630 (£−10046 to £−5215)	£−8022 (£−10661 to £−5383)	£−7564 (£−10118 to £−5010)
Complications: self-catheterisation	£−8620 (£−11315 to £−5925)	£−9168 (£−12004 to £−6333)	£−10632 (£−14077 to £−7187)	£−10048 (£−13292 to £−6804)
Complications: dyspareunia	£−6073 (£−8156 to £−3990)	£−7865 (£−10345 to £−5384)	£−8128 (£−10931 to £−5324)	£−6515 (£−8830 to £−4200)
Complications: extrusion or exposure	£−7842 (£−10178 to £−5506)	£−8607 (£−11108 to £−6106)	£−10351 (£−13599 to £−7104)	£−7641 (£−9986 to £−5296)
Return to normal activities (days)	£−70 (£−110 to £−30)	£−80 (£−121 to £−38)	£−76 (£−119 to £−33)	£−68 (£−106 to £−30)
Symptoms: very much improved	£9317 (£6597 to £12038)	£10 771 (£7651 to £13891)	£11 706 (£8267 to £15144)	£10 246 (£7527 to £12965)
Symptoms: much improved	£7817 (£5430 to £10204)	£9101 (£6299 to £11902)	£9885 (£6885 to £12886)	£8853 (£6422 to £11283)
Symptoms: improved	£6276 (£4098 to £8454)	£7750 (£5128 to £10373)	£8173 (£5459 to £10887)	£7101 (£4863 to £9339)
Avoid activities: rarely	£−554 (£−1645 to £536)	£−934 (£−2056 to £188)	£−967 (£−2199 to £266)	£−786 (£−1842 to £271)
Avoid activities: occasionally	£−1698 (£−2862 to £−535)	£−1772 (£−2951 to £−593)	£−1981 (£−3319 to £−643)	£−1949 (£−3089 to £−808)
Avoid activities: frequently	£−4520 (£−6182 to £−2858)	£−4656 (£−6334 to £−2978)	£−5338 (£−7258 to £−3417)	£−5041 (£−6763 to £−3320)

M1: conditional logit model; M2: error components model; M3: random parameters model; M4: random parameters model with interactions.
*The reference categories are alternative specific constant opt-out, local anaesthesia, no complications, no improvement in symptoms and never avoid activities due to fear of leaking.
†CIs calculated using the delta method, applied in Stata using the 'NLCOM' command.
DCE, discrete choice experiment; WTP, willingness to pay.

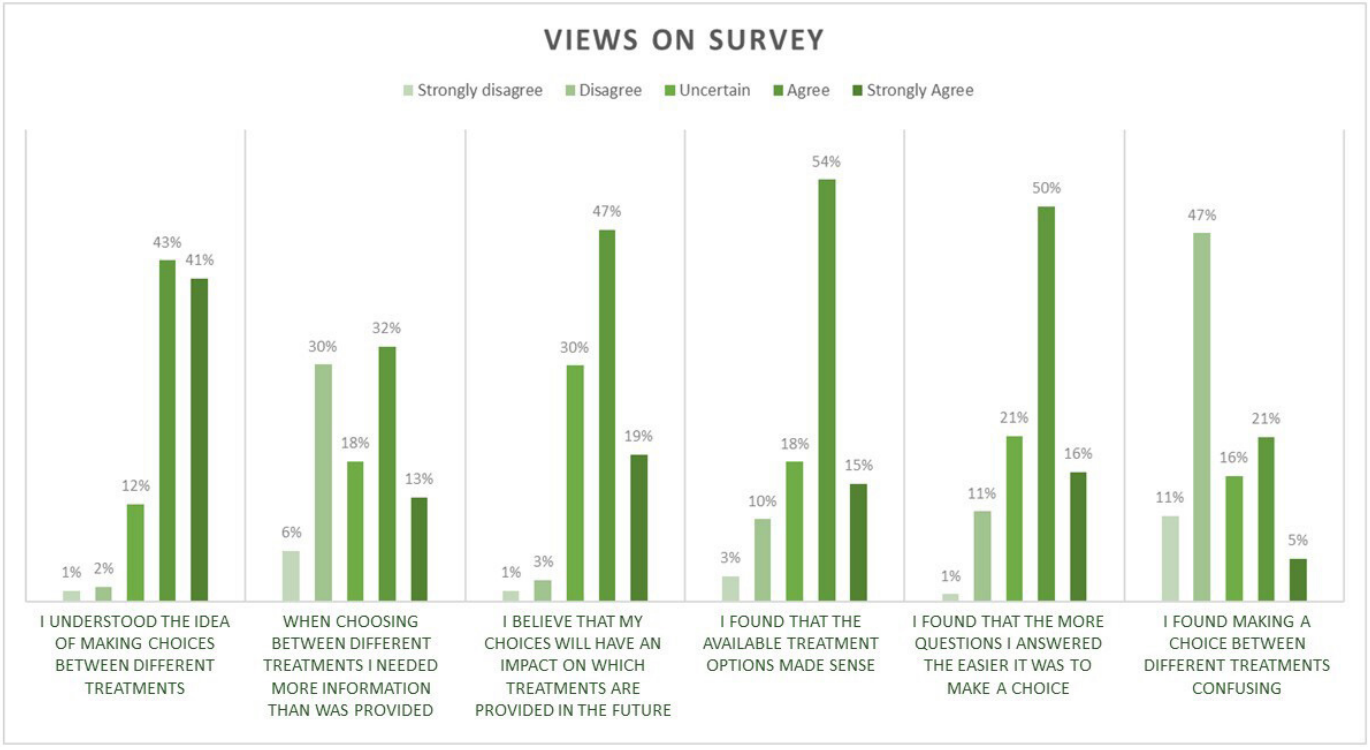

Figure 2 Respondents' perceptions and views on the survey.

process, re-enforcing the importance of including a warm-up choice task in the survey.

DISCUSSION

Summary and interpretation of findings

Our DCE demonstrated that respondents prefer general anaesthesia over local anaesthesia. As expected, women preferred treatments with shorter recovery times, improvements in SUI symptoms and fewer adverse events. Women's valuation of these processes and outcomes is described using WTP, which allows a comparison of valuations across and within different characteristics of care. For the base case model (M3) analysis, women were willing to pay (mean (95% CI)) £76 (£33 to £119) per day of reduction in recovery time following surgery. They highly valued improvements in the PGI-I, ranging from £8173 (£5459 to £10,887) for 'improved' to £11 706 (£8267 to £15,144) for 'very much improved', compared with no improvement. The added value of reduced symptoms was offset by the negative values attached to complications, ranging between £−8022 (£−10 661 to £−5383) and £−10 632 (£−14 077 to £−7187) for the avoidance of various complications. Women also valued treatments that reduced the impact of SUI symptoms on their need to avoid daily activities due to a fear of leakage, with WTP values of £-1981 (£-3319 to £-643) for occasional and willingness to pay values of £-1981 (£-3319 to £-643) for occasional and £−5338 (£−7258 to £−3417) for frequently avoiding daily activities compared with no avoidance.

Our DCE results demonstrate important risk–benefit trade-offs in health outcomes between symptom improvement and risk of complications that are important to understand for shared decision-making. We also demonstrate that women value non-health processes and outcomes that might not be fully captured in QALY-based economic evaluations, including type of anaesthesia and the potential of treatments to reduce the need for women to avoid daily activities due to a fear of leakage.

The inclusion of the cost attribute allows valuation of (WTP for) any service configuration that varies in terms of the DCE attributes and levels. For example, using the WTP tariffs calculated from M3 (base case model), consider two different possible surgical options being evaluated (treatment A and treatment B).

Treatment A (WTP=+£5721) is provided under general anaesthesia (WTP=+£1632), leads to no complications (WTP=£0), takes 7 days to recover from surgery (WTP=−£76×7=−£532), leads to an improvement in incontinence symptoms (WTP=+£8173) and means that the patient occasionally has to avoid daily activities due to a fear of leaking (WTP=−£1981). Total WTP for treatment A is £13 013.

Consider an alternative, treatment B, where surgery is also provided (WTP=+£5721), this time under local anaesthesia (WTP=£0), with a shorter recovery time of 2 days (WTP=−£76×2=−£152). Symptoms of urinary incontinence are much improved (WTP=+£9855), meaning that the patient rarely avoids usual activities due to a fear of leaking (WTP=−£967), but in this case, there is mesh extrusion that requires additional treatment to resolve (WTP=−£10 351). The total value of treatment B is £4106.

In this hypothetical example, treatment A is preferred to treatment B because there are no complications, despite treatment B having better outcomes overall. This example illustrates that it is not always the most effective procedure in terms of preventing urinary incontinence that would be preferred by women, and therefore the benefit/risk trade-offs of different procedures require careful collaborative consideration between women and their healthcare providers.

Comparison with the literature

To our knowledge, ours is the only DCE worldwide that allows estimation of WTP for surgical treatment of SUI. One other UK study uses an online DCE to elicit women's preferences for surgical SUI treatments; however, a cost attribute was not included, meaning results could not be used to calculate WTP or used in cost–benefit analysis.[10] While some of the attributes included by Brazzelli *et al* were comparable with ours (time to return to normal activities), others were not (chronic pain, risk of recurrence, definition and description of adverse events). Where similar attributes were included, the general findings were consistent with our study. Women prefer surgery to none and preferred shorter post-surgery recovery. Avoidance of complications appears to have a greater impact on choices in our study that in Brazzelli *et al*'s. However, caution is required when making direct comparisons because Brazzelli *et al* included a separate attribute to value 'chronic pain', whereas in our study, the value of avoiding chronic pain is described in the context of avoiding complications due to mesh extrusion or erosion. Our DCE finds a high WTP to avoid mesh extrusion/erosion, likely due to the association between these events and chronic pain.

Strengths and limitations

Our DCE study was based on rigorous iterative methodology, and piloted with a sample of the trial participants, which lead to some refinement and improvement of the final experimental design. The inclusion of the cost attribute enables a comparison of value (WTP) attached to different characteristics of care and outcomes using a single metric (money) and enables calculation of marginal WTP tariffs that can be used in future service evaluation and cost–benefit analyses.

A key strength of the DCE approach is that it enables an assessment of the trade-offs that women are willing to make, and is useful for shared decision-making, involving women directly in the resource allocation process. For example, our DCE shows that women prefer to have surgery conducted under general anaesthesia, but they also prefer shorter recovery times, which may be more likely for procedures conducted under local anaesthesia. In the clinical trial, most SIMS procedures were performed under local anaesthesia, with an option to change to general anaesthesia if requested or deemed clinically necessary. Our DCE findings re-enforce the importance of involving women early in the decision-making process, ensuring that they are provided with all the information about the advantages and disadvantages of different types of anaesthesia to make informed choices.

We elicit preferences for a sample of women taking part in a trial, who have experience of receiving surgery for SUI. This can be viewed as both a strength and a limitation. As a strength, our sample is likely to have well-formed preferences based on information provided as part of the trial and generated through lived experiences. However, as a limitation, we cannot guarantee that our results would be generalisable to a broader sample of women in the general population. Further methodological work investigating the potential for benefit transfers between different samples and settings is required.

One limitation of our study is that the coefficient on the cost attribute is lower than might have been expected. This might suggest that the cost levels in the DCE may not have been high enough to induce trade-offs against cost in decision-making. This may be a cause for concern that outcomes are overvalued, and it is important to consider the validity of the estimates against other studies in the literature. Our DCE shows that women are willing to pay a one-off payment of £11 706 for the maximum improvement on the PGI-I. In comparison, in a US contingent valuation survey, Subak *et al* found that women were willing to pay US$70 (2005 values) per month for complete resolution of incontinence symptoms.[11] Assuming an average age of 60 years and life expectancy of 80 years, this would suggest women were willing to pay 70×12×20=$16 800, a value only slightly higher than our study. Despite differences in study design, framing of cost and different healthcare systems, the results provide some reassurance that our WTP estimates are not too high. A further limitation, common to all stated preference studies, is the potential for hypothetical bias. Hypothetical bias occurs when respondents to a stated preference survey, such as a DCE, make choices in the survey that may not always accurately reflect the choices that they would make if faced with a similar set of real-life circumstances. This may lead to inflated estimates of WTP. We attempted to mitigate hypothetical bias within the survey by explicitly asking respondents to consider how much they would be able to pay if faced with the same choice in a real-world scenario.

In conclusion, the DCE results indicate that surgical procedures for SUI were valued by trial participants. The DCE illustrates important value trade-offs between risks (adverse events) and benefits (improvements in SUI symptoms) that require careful consideration between women and their healthcare providers in shared decision-making. We also show that women value non-health processes and outcomes of care, such as type of anaesthesia and return to work and normal activities that may not be fully captured in standard economic evaluation methods.

Contributors DB (Senior Research Fellow, Health Economist) designed the discrete choice experiment (DCE), analysed the data and wrote the first draft of this paper.

DB confirms the accuracy and completeness of the DCE data and acts as guarantor for the work. MK (Health Economist) designed the DCE and critically revised this paper. DC (Statistician) conducted statistical analyses for the SIMS trial and critically revised this paper. TD (Trial Manager, Trialist) was responsible for the day-to-day management of the study, including coordination of DCE response collection and critically revised this paper. KB (Consultant Urogynaecologist) contributed to the recruitment of participants, interpretation of the data and conduct of the study, and critically revised this paper. JW (Patient and Public Lead) contributed to the conception, design and the conduct of the study, and interpretation of the data, and critically revised this paper. JN'D (Professor of Urological Surgery, Co-Chief Investigator from January 2015 to July 2015) contributed to the conception, design and the conduct of the study and critically revised this paper. GM (Professor, CHaRT Director, Statistician and Trialist) contributed to the conception and design of the study, the conduct of the study, and the interpretation of results, and critically revised this paper. JN (Professor of Medical Statistics and Trial Methodology; Director of Edinburgh Clinical Trials Unit and SIMS Study Co-Chief Investigator from 2015 to 2017) contributed to the conception and the design of the study, and the conduct of the study, and critically revised this paper. MA-F (Professor, Clinical Chair in Gynaecology, Consultant Gynaecologist and Sub-specialist Urogynaecologist and Chief Investigator of the SIMS Study) contributed to the conception and the design of the study, recruitment of participants, the conduct of the study, and the interpretation of the results, and critically revised this paper. DB is guarantor.

Funding The study was funded by the National Institute for Health Research (NIHR) Health Technology Assessment Programme (project number: 12/127/157). The full project report is available from the funder's website: https://www.journalslibrary.nihr.ac.uk/hta/BTSA6148#/abstract. The full citation for the funder report is: Abdel-Fattah M, Cooper D, Davidson T, Kilonzo M, Boyers D, Bhal K, *et al*. Single-incision mini-slings versus standard synthetic mid-urethral slings for surgical treatment of stress urinary incontinence in women: The SIMS RCT. Health Technol Assess 2022;26(47). The Health Economics Research Unit and Health Services Research Unit are both funded by the Chief Scientist's Office (CSO) of the Scottish government health directorates. The SIMS trial was registered as: ISRCTN93264234.

Competing interests DB reports grants from UK NIHR during the conduct of the study. KB has been a speaker and trainer for the following companies in the past: Astellas, Pfizer, AMS, Contura, Allergan and others, where he received honoraria and sponsorship towards attending scientific conferences. JN'D reports HTA General Committee 2016–2018. GM reports grants from UK NIHR during the conduct of the study. JN reports grants from University of Edinburgh, outside the submitted work; and past and present member of the following: HTA Commissioning Sub-Board (EOI), NIHR CTU Standing Advisory Committee, NIHR HTA & EME Editorial Board, Pre-Exposure Prophylaxis Impact Review Panel, EME Strategy Advisory Committee, EME-Funding Committee Members, EME Funding Committee Sub-Group Remit & Comp Check, HTA General Committee, HTA Funding Committee Policy Group (formerly CSG), HTA Commissioning Committee, HTA Post-funding committee teleconference 2016–2019 and COVID-19 reviewing 2020. MA-F reports none in the last 5 years. Before 2015, he has been a speaker, consultant and/or surgical trainer for a number of industrial companies (Astellas, Ethicon, Bard, Pfizer, AMS, Coloplast and others); has reimbursed his travel expenses and on occasions received personal honoraria, proctorship fees and sponsorship towards attending scientific conferences; received research grant from Coloplast managed by University of Aberdeen. Moreover, his limited number of trainees attended pharmaceutical sponsored educational/leadership workshops and/or received assistance towards presenting their research work in scientific conferences. He was also Chairman of the Scottish Pelvic Floor Network (SPFN), which at the time, received financial sponsorship from various industrial companies (including all those mentioned above) and non-profit organisations for its annual meetings and surgical workshops. The SPFN provided an educational grant funding the PI at the highest recruiting site to attend the International Continence Society annual scientific conference in Brazil in 2014. At present, he receives travel sponsorship and occasionally speaker's fees from numerous national and international conferences and non-profit organisations when invited as guest speaker and/or expert surgeon. In 2019, and at the request from NHS Grampian, he attended two educational meetings for setting up sacral nerve stimulation service partially funded by Medtronic. He is the Chief Investigator for four NIHR-HTA-funded studies. He does not hold (and never held) any shares (or similar) in any of the industrial companies (medical or non-medical). To the best of his knowledge, none of the above have influenced his research or clinical practice. No other authors declared any potential conflict of interest.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not required.

Ethics approval The study was reviewed and approved by the North of Scotland Research Ethics Committee (reference number: 13/NS/0143). All participants provided informed written consent to take part in the study, as part of the SIMS RCT consent process.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. Data are available upon reasonable request by contacting the corresponding author.

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Appendix A – Discrete choice experiment: Experimental design:

*The experimental design was developed using NGENE software (ChoiceMetrics, 2014)

Design
;alts = A, B, NO
;rows = 40
;eff = (mnl,d)
;block = 4
;cond:
if(A.AVIOD = 4, A.IMPRO > 1),
if(B.AVIOD = 4, B.IMPRO > 1),
if(A.COMPL = 2, A.IMPRO > 1),
if(B.COMPL = 2, B.IMPRO > 1)
;model:
U(A) = b0[1] + b1[0]*TYPE[1,2] + b2.dummy[-0.635|-0.967|-0.665|-0.807]*COMPL[1,2,3,4,5] + b3.dummy[0|0|0]*DAYS[3,13,23,33] + b4.dummy[0.757|1.056|1.339]*IMPRO[1,2,3,4] + b5.dummy[0|0|0]*AVIOD[1,2,3,4] + b6.dummy[0|0|0]*COST[1000,2000,3500,5000]/
U(B) = b0[1] + b1[0]*TYPE[1,2] + b2.dummy[-0.635|-0.967|-0.665|-0.807]*COMPL[1,2,3,4,5] + b3.dummy[0|0|0]*DAYS[3,13,23,33] + b4.dummy[0.757|1.056|1.339]*IMPRO[1,2,3,4] + b5.dummy[0|0|0]*AVIOD[1,2,3,4] + b6.dummy[0|0|0]*COST[1000,2000,3500,5000] $

**Note: The expected design selected from the experimental design software was evaluation number 20,291 from the algorithm with a multinomial D-error of 0.294888.

TREATMENT CHOICE QUESTIONNAIRE

Participant Study No

SIMS

Standard vs. Mini-Slings

SIMS

Standard vs. Mini-Slings

CONFIDENTIAL

TREATMENT CHOICE QUESTIONNAIRE

SIMS is funded by the National Institute for Health Research
Health Technology Assessment Programme (NIHR HTA)

FUNDED BY NIHR | National Institute for Health Research

ISRCTN93264234

v2 block 1, 11/11/2019

Thank you for taking the time to help us with our research!

We are interested in **YOUR** opinions and preferences for treatment of stress urinary incontinence. We would be very grateful if you would take a moment to read this information and complete the questionnaire that follows.

This questionnaire is being sent to all SIMS trial participants. Participation is entirely voluntary and any information you give us will be treated in complete confidence.

This type of questionnaire may be different to others you have completed but full instructions are provided.

We hope you decide to take part as the results will be used to help women in the future by improving the treatments offered for stress urinary incontinence.

Thank you for your participation.

Guidance notes for questionnnaire

This questionnaire asks you to make a series of choices between three different treatments (Treatment A, Treatment B or No Treatment). When deciding how best to answer the questions, you will need to weigh up different aspects of each option. The treatments differ in terms of:

Type of anaesthesia

This relates to the type of anaesthesia that might be used during the treatment

- ***General anaesthesia***
- ***Local anaesthesia***

Complications

You may or may not experience complications because of your treatment. You may experience:

- ***New onset urgency urinary incontinence*** – an urgent desire to pass urine and sometimes urine leaks before you have time to get to the toilet.
- *Post-operative* ***intermittent self-catheterisation*** – due to temporary problems emptying the bladder fully, short-term self-catheterisation is required for a few days or weeks
- ***Dyspareunia*** – pain in the pelvis during or after sexual intercourse.
- ***Mesh extrusion/erosion*** – exposure of mesh through the vaginal wall or nearby organ. This can happen soon, or years after surgery. Sometimes, further surgery might be needed to help relieve pain, or to remove the mesh.
- ***None*** You would not experience any of these complications

Number of recovery days

This means your usual activities, such as work or leisure, before you had your surgery; **not** usual activities before you had incontinence.

- ***3 days***
- ***13 days***
- ***23 days***
- ***33 days***

Level of improvement

This means improvement in your incontinence symptoms after surgery. You may be:

- ***Very much improved -*** You leak none or only a small amount of urine once a week or less. You never use pads to keep dry.
- ***Much improved*** - You leak a small amount of urine 2-3 times per week. You mainly leak when you are physically active. You occasionally use pads to keep dry.
- ***Improved -*** You leak a moderate amount of urine once a day. You mainly leak when you are physically active. You often use pads to keep dry.
- ***None*** - You leak a moderate amount of urine several times a day. You mainly leak when you cough, sneeze or are physically active. You always use pads to keep dry.

Avoid activities

This means how often you avoid activities due to a fear of leaking urine? Activities might include socialising, physical activity, sex, travel or shopping.

- ***Frequently*** which means you never avoid activities or that you avoid them: -
- ***Occasionally***
- ***Rarely***
- ***Never***

Cost of treatment

This means all the costs involved with receiving treatment, such as: the cost of the treatment itself, time off work and travel costs such as bus fares or petrol costs or car park charges. We know that you do not have to pay for NHS treatment, but please imagine a scenario where you do. Think about how much each treatment would be worth to you, and whether you would be able and willing to pay for it.

- ***£1,000***
- ***£2,000***
- ***£3,500***
- ***£5,000***

Please refer to the guidance notes when you need to.

Section 1 – Your views and experience of treatment

In this section we are interested in your views on treatment.

1. **Did you have a preferred type of anaesthetic for treatment of stress urinary incontinence? PLEASE TICK (✓) the box that applies.**

No preference	Yes – local anaesthetic	Yes – general anaesthetic
☐	☐	☐

2. **Did you experience any of the following complications as a result of your stress urinary incontinence treatment?**

New onset urgency urinary incontinence – an urgent desire to pass urine and sometimes urine leaks before you have time to get to the toilet.	Yes ☐	No ☐
Post-operative intermittent self-catheterisation – due to temporary problems emptying the bladder fully, short-term self-catheterisation is required for a few days or weeks.	Yes ☐	No ☐
Dyspareunia - experience pain in the pelvis during or after sexual intercourse.	Yes ☐	No ☐
Mesh extrusion/erosion – exposure of the tape through the vaginal wall or nearby organ which can occur years after surgery. Requires further surgery to remove the sling.	Yes ☐	No ☐
Did you experience **any other complication**	Yes ☐	No ☐
If yes please write below:		

3. **How long did it take to fully recover from surgery for stress urinary incontinence?** Please note this describes the number of days before you could return to your usual activities, such as work or leisure, before you had your surgery; **not** usual activities before you had incontinence

PLEASE SPECIFY HOW MANY DAYS:
(ENTER '0' IF NONE)

Please imagine this situation:

You leak a moderate amount of urine several times a day. You leak when you cough, sneeze or are physically active. Your urinary problem causes you to occasionally avoid activities due to fear of leaking. You always use pads to keep dry from your stress urinary incontinence.

4. Please rate how acceptable you think the following levels of improvement are for the above set of symptoms

	Highly unacceptable	Unacceptable	Uncertain	Acceptable	Highly acceptable
Very much improved - You leak **none or only a small amount** of urine **once a week or less**. You **never** use pads to keep dry.	☐	☐	☐	☐	☐
Much improved - You leak a **small amount** of urine **2-3 times per week**. You mainly leak when you are **physically active**. You **occasionally** use pads to keep dry.	☐	☐	☐	☐	☐
Improved - You leak a **moderate amount** of urine **once a day**. You mainly leak when you **are physically active**. You **often** use pads to keep dry.	☐	☐	☐	☐	☐
None - You leak a **moderate amount** of urine **several times a day**. You mainly leak when you **cough, sneeze or are physically active**. You **always** use pads to keep dry.	☐	☐	☐	☐	☐

5. Continuing to imagine the above scenario, how often would you avoid activities due to a fear of urinary leakage? Please note those activities might include socialising, physical activity, sex, travel and shopping.

☐ Frequently
☐ Occasionally
☐ Rarely
☐ Never

Section 2 – What treatment do you prefer?

In this section we want to understand how people choose between different types of treatment. There are 13 questions for you to complete, after the example; please answer them all.

To answer the questions in this section, PLEASE IMAGINE THIS SITUATION:

You leak a moderate amount of urine several times a day. You mainly leak when you cough, sneeze or are physically active. Your urinary problem causes you to occasionally avoid activities due to fear of leaking. You always use pads to keep dry from your stress urinary incontinence.

We would like to understand how a treatment's characteristics affect which treatment, if any, you would choose if you were in the situation described above.

Each choice will describe two treatments that you can receive. We would like you to tell us if you would choose one of the treatments, and, if so, which one.

- In each choice, please imagine that you can only receive one of the two treatments or have no treatment.
- If you choose no treatment, this means that you would not receive treatment and your situation would remain as described above.
- At first glance the choices may appear the same, but in fact each one is different.

We understand that some of the choices will be difficult to make, but there are no right or wrong answers. Your personal opinion is what matters.

ON THE FOLLOWING PAGE THERE IS AN EXAMPLE OF A CHOICE QUESTION, FOLLOWED BY 13 QUESTIONS FOR YOU TO ANSWER.

PLEASE READ THE EXAMPLE BEFORE CONTINUING TO COMPLETE THE REST OF THE QUESTIONNAIRE

EXAMPLE CHOICE QUESTION

To answer the questions in this section, PLEASE IMAGINE THIS SITUATION:

You leak a moderate amount of urine several times a day. You mainly leak when you cough, sneeze or are physically active. Your urinary problem causes you to occasionally avoid activities due to fear of leaking. You always use pads to keep dry from your stress urinary incontinence.

EXAMPLE QUESTION

Please compare the treatments and tick which treatment option you would choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	Pelvic pain during or after sex	None	None
Number. of recovery days	23	3	0
Level of improvement	Much improved	Very much improved.	None
Avoid activities due to fear of leaking	Occasionally	Rarely	Occasionally
Cost to you	£1,000	£3,500	£0
Which treatment would you choose (tick one box only)?	**Treatment A** ☐	**Treatment B** ☑	**No Treatment** ☐

By choosing Treatment B, this person prefers the procedure done under **local anaesthetic**. They would experience **no complications** as a result of the treatment. It would take them **3 days** to return to work or usual activities. After treatment the person will be **very much improved** and **rarely avoid activities** due to a fear of leaking urine for a **cost of £3,500**.

This person thinks that Treatment B is better than either Treatment A or No Treatment when they have the symptoms described above.

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To answer the questions in this section, PLEASE IMAGINE THIS SITUATION:

You leak a moderate amount of urine several times a day. You mainly leak when you cough, sneeze or are physically active. Your urinary problem causes you to occasionally avoid activities due to fear of leaking. You always use pads to keep dry from your stress urinary incontinence.

Choice 1: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	Pelvic pain during or after sex	New urge incontinence	None
Number. of recovery days	3	23	0
Level of improvement	Very much improved	None	None
Avoid activities due to fear of leaking	Occasionally	Rarely	Occasionally
Cost to you	£2,000	£1000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 2: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	New urge incontinence	Pelvic pain during or after sex	None
Number. of recovery days	33	13	0
Level of improvement	None.	None	None
Avoid activities due to fear of leaking	Never	Frequently	Occasionally
Cost to you	£5,000	£3,500	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 3: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	Local	Genera;	None
Type of complication	Pelvic pain during or after sex	New urge incontinence	None
Number. of recovery days	33	13	0
Level of improvement	None	None	None
Avoid activities due to fear of leaking	Occasionally	Frequently	Occasionally
Cost to you	£3,500	£2,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 4: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	New urge incontinence	Intermittent catheterisation	None
Number. of recovery days	3	23	0
Level of improvement	Much improved.	Improved	None
Avoid activities due to fear of leaking	Occasionally	Never	Occasionally
Cost to you	£1000	£3,500	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 5: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	Local	General	None
Type of complication	None	Intermittent catheterisation	None
Number. of recovery days	3	23	0
Level of improvement	None	Very much improved	None
Avoid activities due to fear of leaking	Never	Occasionally	Occasionally
Cost to you	£1,000	£2,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 6: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	None	Intermittent catheterisation	None
Number of recovery days	13	33	0
Level of improvement	Very much improved	None	None
Avoid activities due to fear of leaking	Never	Rarely	Occasionally
Cost to you	£2,000	£3,500	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

7: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	Local	General	None
Type of complication	None	Mesh extrusion or erosion	None
Number of recovery days	3	23	0
Level of improvement	Very much improved.	None	None
Avoid activities due to fear of leaking	Never	Frequently	Occasionally
Cost to you	£1,000	£5,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 8: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	Local	General	None
Type of complication	Mesh extrusion or erosion	Intermittent catheterisation	None
Number of recovery days	33	3	0
Level of improvement	Much improved	Improved	None
Avoid activities due to fear of leaking	Frequently	Rarely	Occasionally
Cost to you	£2,000	£5,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 9: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	Intermittent catheterisation	None	None
Number of recovery days	3	13	0
Level of improvement	Improved	Very much improved	None
Avoid activities due to fear of leaking	Frequently	Never	Occasionally
Cost to you	£2,000	£5,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 10: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	Mesh extrusion or erosion	Intermittent catheterisation	None
Number of recovery days	23	13	0
Level of improvement	Much improved	Improved	None
Avoid activities due to fear of leaking	Rarely	Frequently	Occasionally
Cost to you	£5,000	£1000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice 11: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	Local	General	None
Type of complication	Pelvic pain during or after sex	Mesh extrusion or erosion	None
Number of recovery days	23	13	0
Level of improvement	Much improved	Improved	None
Avoid activities due to fear of leaking	Frequently	Occasionally	Occasionally
Cost to you	£5,000	£3,500	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

Choice set 12: Which option would you choose?

	Treatment A	**Treatment B**	**No Treatment**
Type of anaesthetic	General	Local	None
Type of complication	Intermittent catheterisation	New urge incontinence	None
Number of recovery days	3	13	0
Level of improvement	None	Much improved	None
Avoid activities due to fear of leaking	Frequently	Occasionally	Occasionally
Cost to you	£3,500	£5,000	£0

Which treatment would you choose (tick one box only)? **Treatment A** ☐ **Treatment B** ☐ **No Treatment** ☐

13. Thinking about the information and questions in this questionnaire, please tell us how strongly you agree or disagree with each of the following statements.

PLEASE TICK (✓) ONE BOX ONLY WHICH IS CLOSEST TO YOUR OPINION FOR EACH ROW

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
I understood the idea of making choices between different treatments					
When choosing between different treatments I needed more information than was provided					
I believe that my choices will have an impact on which treatments are provided in the future					
I found that the available treatment options made sense					
I found that the more questions I answered the easier it was to make a choice					
I found making a choice between different treatments confusing					

Section 3: About you

So we can understand better your answers to the previous questions, we would like to ask a few questions about yourself.

1. Which of these qualifications do you have?
PLEASE TICK (✓) EVERY BOX THAT APPLIES IF YOU HAVE ANY OF THE QUALIFICATIONS LISTED.

Left school with no qualifications	☐
Completed “O” levels or GCSEs	☐
Completed “A” levels	☐
Apprenticeship or vocational training	☐
University degree	☐

2. Which group represents your total income including any benefits received and before any deductions? PLEASE TICK (✓) EITHER WEEKLY OR ANNUAL INCOME

☐	Up to £99 per week	☐	Up to £5,199 per year
☐	£100 and up to £199 per week	☐	£5,200 and up to £10,399 per year
☐	£200 and up to £299 per week	☐	£10,400 and up to £15,599 per year
☐	£300 and up to £399 per week	☐	£15,600 and up to £20,799 per year
☐	£400 and up to £499 per week	☐	£20,800 and up to £25,999 per year
☐	£500 and up to £599 per week	☐	£26,000 and up to £31,199 per year
☐	£600 and up to £699 per week	☐	£31,200 and up to £36,399 per year
☐	£700 and up to £999 per week	☐	£36,400 and up to £51,999 per year
☐	£1000 and above per week	☐	£52,000 and above per year
☐	Prefer not to say	☐	Prefer not to say

3. Do you have any comments about this questionnaire?