Published in final edited form as:

J Hand Surg Am. 2019 June ; 44(6): 480–486.e1. doi:10.1016/j.jhsa.2019.01.005.

The Feasibility and Usability of a Ranking Tool to Elicit Patient Preferences for the Treatment of Trigger Finger

Lauren M. Shapiro, MD*, Sara L. Eppler, MPH*, and Robin N. Kamal, MD*

*Department of Orthopaedic Surgery, Stanford University, Redwood City, CA

Abstract

Purpose—Shared decision making is an approach where physicians and patients collaborate to make decisions based on patient values. This requires eliciting patients' preferences for each treatment attribute before making decisions; a structured process for preference elicitation does not exist in hand surgery. We tested the feasibility and usability of a ranking tool to elicit patient preferences for the treatment of trigger finger. We hypothesized that the tool would be usable and feasible at the point of care.

Methods—Thirty patients with a trigger finger without prior treatment were recruited from a hand surgery clinic. A preference elicitation tool was created that presented 3 treatment options (surgical release, injection, and therapy and orthosis) and described attributes of each treatment extracted from literature review (eg, success rate, complications). We presented these attributes to patients using the tool and patients ranked the relative importance (preference) of these attributes to aid in their decision making. The System Usability Scale and tool completion time were used to evaluate usability and feasibility, respectively.

Results—The tool demonstrated excellent usability (System Usability Scale: 88.7). The mean completion time was 3.05 minutes. Five (16.7%) patients chose surgery, 20 (66.7%) chose an injection, and 5 (16.7%) chose therapy and orthosis. Patients ranked treatment success and cost as the most and least important attributes, respectively. Twenty-nine (96.7%) patients were very to extremely satisfied with the tool.

Conclusions—A preference elicitation tool for patients to rank treatment attributes by relative importance is feasible and usable at the point of care. A structured process for preference elicitation ensures that patients understand the trade-offs between choices and can assist physicians in aligning treatment decisions with patient preferences.

Clinical relevance—A ranking tool is a simple, structured process physicians can use to elicit preferences during shared decision making and highlight trade-offs between treatment options to inform treatment, choices.

Keywords

Patient-centered care; preference elicitation; shared decision making; trigger finger

TRIGGER FINGER RESULTS FROM entrapment of the flexor tendon at the A1 pulley.¹ Trigger finger, one of the 2 most common hand conditions in a hand surgeon's clinic,² has a 2% to 3% lifetime incidence³ that ranges to up to 10% in diabetics.⁴ Several treatment options exist and, although nonsurgical measures are typically the initial treatment, no standard protocol exists.¹ A 2018 Cochrane review was unable to recommend one treatment over the others.⁵ As such, multiple treatments for the condition are available.⁶ Patient-centered care for a condition that has multiple treatment options is best delivered when care is directed toward a patient's values and preferences for the attributes of each treatment option.

Shared decision making (SDM) is a collaborative approach used to inform the decision-making process by accounting for patient preferences and evidence-based practice. Multiple frameworks exist to implement SDM.^{7,8} For example, the SHARE approach, developed by the Agency for Healthcare Research and Quality, includes advice to: (1) seek your patient's participation, (2) help your patient explore and compare treatment options, (3) assess your patient's values and preferences, (4) reach a decision with your patient, and (5) evaluate your patient's decision.⁹ Prior work shows that SDM improves patient confidence,^{10,11} compliance,¹² and participation in their treatment,¹¹ and increases patient satisfaction with their visit.¹⁰ Patients also prefer taking an active role in their decision making through an SDM approach.^{13–15} Web sites, videos, and information sheets are often used to educate patients and help them explore treatment options; however, these "decision aids" focus on education, do not include a process to help patients assess their preferences, and can be biased and difficult to understand.¹⁶ For example, a decision aid includes the pros and cons of each option, without a process to help the patient decide how important each attribute is when considered in the context of each patient's circumstances. Currently, no standard process to help patients prioritize their preferences for treatment attributes exists, despite extensive work demonstrating the complexity of decision making in the setting of competing attributes.^{10,12,17,18}

As patient-centered care becomes increasingly emphasized, a process to elicit patient preferences at the point of care is needed. As such, there are efforts to develop tools helping patients rank their preferences for competing treatment attributes. For example, a ranking tool allows patients to evaluate attributes of treatment options in the same context and rank each attribute relative to others to identify what is most/least important.^{19,20} Conjoint analysis is another method that allows a patient to evaluate his or her willingness to accept trade-offs between multiple treatment attributes together.^{19,21–23} In other specialties, these tools are used to assist patients in clarifying their preferences for urethral strictures,²⁴ psoriasis,²⁵ hepatitis C,²⁶ and prostate cancer screening.²⁰ Preference elicitation using conjoint analysis has been studied in hand surgery in hospital selection for carpal tunnel release²⁷ and in the importance of treatment attributes in patients with a theoretical nondisplaced scaphoid waist fracture.²⁸ The aim of this study was to evaluate the feasibility and usability of a ranking preference elicitation tool used at point of care (in real time) for the treatment of trigger finger.

METHODS

Tool creation

Approval for the study was obtained through the institutional review board. We first reviewed the literature and identified 6 attributes of care that patients would rank using the tool: success rate of treatment, rate of complications, immobilization time, pain with treatment, use of anesthesia, and cost of treatment. These attributes were discussed for each of 3 treatment options: (1) hand therapy and orthosis, (2) corticosteroid injection, and (3) open surgical release of the A1 pulley. The attributes were listed in an interactive, tablet-based (ipad, Apple, Cupertino, CA) ranking tool that provided background information on trigger finger, and then listed the attributes of treatment. We used the available evidence to inform a conversation between the surgeon and patient regarding each of the 6 attributes (eg, success rate) and their respective levels (eg, 50% success rate) for each attribute based on literature review and clinical practice patterns (Table 1).^{2,5,29–41} After discussion of the attributes and their levels for each treatment, the patients rank the attributes in order of importance using the tool (Qualtrics Research Software, Provo, UT). This approach has been used in prior studies.^{11,19,20,22} The ranking profile was then used to inform a collaborative discussion on which treatment best aligned with the patient's preferences. The complete ranking tool (Figure A1, available on the Journal's Website at www.jhandsurg.org) can also be accessed at <http://med.stanford.edu/s-voices/tools.html>.

Patient selection

Patients recruited to participate represented a convenience sample of those presenting to the hand clinic and diagnosed with a trigger finger by the senior author. Inclusion criteria were age 18 years or older, no prior history of immobilization, therapy, injections, or surgery for the finger, and English literacy. Thirty patients were included based on prior recommendations for feasibility studies and as we did not anticipate a large variability in response data.^{42–45}

Data collection

A fellowship-trained hand surgeon (RNK) presented the preference elicitation tool, explained the options and relevant literature, and participants used the tool to rate their preferences for attributes accordingly. The tool was presented with an iPad using a "rank order" question on web-based Qualtrics Research Software (Figure A1). After using the tool and deciding treatment, the surgeon left the room and a research coordinator administered a follow-up survey. We assessed usability of the tool via the validated System Usability Scale, a questionnaire scored from 0 to 100 in which a score of 68 or above indicates above average usability.^{46,47} We assessed feasibility by recording the time to complete the tool (excluding the informed consent process for study inclusion and for surgery or injection when these options were picked). Prior studies evaluating decision aids have demonstrated time to completion ranging from 8 minutes 46 seconds up to 1 hour.^{10,20,22,48,49} We used 8.5 minutes as a cutoff for feasibility based on prior work and the practice pattern of a busy hand surgery practice (5–10 patients per hour). At the end of the clinic visit, patients were asked (1) their level of satisfaction with the tool and (2) if the tool correctly helped identify their

treatment choice, each on a 1–10 ordinal scale (1 being extremely unsatisfied or strongly disagree and 10 being extremely satisfied or strongly agree, respectively).

Statistical analysis

Descriptive statistics (mean and standard deviation) were used for the System Usability Scale score (usability) and time to complete the tool (feasibility). We reported the number of each attribute that patients ranked as most important. We calculated each participant's first, second, and third important attribute and reported this as a percentage of the frequency with which each attribute was rated in that specific rank. We reported the frequency with which each attribute was ranked in an individual's top 3 preferences. We analyzed the frequency with which each attribute was ranked in an individual's top 3 preferences distributed by treatment choice. We reported level of satisfaction as a percentage.

RESULTS

Thirty patients completed the preference elicitation tool and associated questions during the study period (Table 2). The mean patient age was 60.5 years ($SD \pm 12.3$). Of 30 patients, 13 (43%) were female. The average System Usability Scale score was 88.7 ($SD \pm 13.2$). The average completion time was 3.05 minutes ($\pm SD 0.70$). Five (16.7%) patients chose surgical release, 20 (66.7%) patients chose an injection, and 5 (16.7%) patients chose therapy and orthosis. Nineteen (59.4%) patients ranked success rate of treatment as the most important attribute (Fig. 1). The attributes most and least strongly affecting patients' decision-making process were the success rate of the treatment and the cost of treatment, respectively (Table 3). Attributes most strongly influencing patients' treatment decisions were different for each treatment decision. Ninety-seven percent of patients were "very" or "extremely" satisfied with the tool. Ninety-three percent of patients felt that the tool correctly helped identify their treatment choice.

DISCUSSION

Prior studies have demonstrated that patients with hand and upper extremity conditions desire to be a part of the decision-making process.^{13,15} As health care delivery transitions toward a more patient-centered approach, tools that assist patients in making decisions that align with their values and preferences will be necessary. Currently, decision aids are primarily tailored to improve patient education about their condition and treatment options, and do not include a structured process to help patients understand their preferences for the attributes of care, understand how these preferences align with each treatment option, and assess the trade-offs between multiple treatment options. For example, patient A may prefer the treatment with the highest success rate regardless of risk, whereas patient B may prefer the least risky treatment option regardless of its success rate. Previous studies have demonstrated that the use of decision aids and preference elicitation tools improves patients' ability to express their treatment preference,^{11,24} increase patient satisfaction with their visit,¹⁰ and improve patients' confidence in,^{10,11} and compliance with, their decision.¹² An additional advantage of a ranking preference tool as part of a decision aid is the potential to improve utilization of physician time, decrease counterproductive clinic time (eg, improve appropriateness of patient questions and decrease repetition), and shorten the overall clinic

visit, thereby leading to more appropriate utilization of health care services.^{10,12} Our study shows that a ranking preference tool is usable and feasible in a busy hand and upper extremity clinic, and that patients are satisfied with the tool.

Patient-centered care not only increases a patient's understanding of their condition and treatment options, but also improves time management, as shown by our measurement of feasibility (time to complete tool).^{50–53} Previous studies using decision aids have recorded a mean completion time of 8 minutes 46 seconds to up to 1 hour.^{10,20,48,49} A systematic review of conjoint analyses concluded that tool completion time was not consistently reported and highlighted that tool implementation within a clinic workflow is a barrier to implementation.²² Conversely, Bozic et al,¹⁰ in a randomized controlled trial, implemented a decision aid tool in a joint reconstruction clinic and, despite noting that patients reported higher confidence in the questions asked, found no significant difference in total consultation time or face-to-face time with the surgeon. Although no standard time has been predetermined to conclude that a tool is feasible, and although complexity of a condition may affect what time commitment is acceptable (eg, decision for heart transplant vs trigger finger surgery), the time to completion in this study could make it potentially operational in a busy hand clinic setting. Use of the tool may potentially save time by streamlining discussions with patients and preventing patient confusion and repetition of information, although further studies are needed.

Success rate, immobilization time, and complication rates were the most influential factors in decision making. The cost of treatment and use of anesthesia were the 2 least influential factors. Shamma et al²⁸ identified cost as the most important attribute in the relative importance of treatment attributes through the use of a conjoint analysis tool in individuals asked about a hypothetical nondisplaced scaphoid waist fracture. The importance of cost in that study may be secondary to using people without the condition (not patients) who are not dealing with their own insurance plans and deductibles or due to the difference in hand conditions studied. The sample size and single-surgeon nature of our study limit the generalizability of any conclusions regarding variables (eg, age) that may be associated with certain ranking profiles. Future work using the ranking tool could be focused on understanding these relationships and developing tailored educational tools that are directed toward certain ranking profiles for common hand conditions.

Our study has limitations. Although we conducted a thorough review of attributes that may play a role in patients' treatment decisions and attempted to quantify levels of each attribute, there are undoubtedly attributes that affect patient decisions that were not included in the tool (eg, time away from work, number of physician visits after index visit), and additionally, there is variability in clinical practice with regard to levels of various attributes (eg, success and complication rates, exact immobilization time, cost of treatment). Furthermore, there is significant variation in levels of attributes as defined and studied in the literature (eg, injection solution, definition of success rate, type of immobilization used). An inherent limitation in the study design was also the potential effect that a surgeon may have on a patient during the decision-making process. Although the tool could be reviewed on a computer without the surgeon, the authors believe that the inclusion of a surgeon in the discussion is more reflective of actual clinical practice. It is likely that a surgeon's bias may

be minimized through the use of the tool as it refers directly to objective data and engages and empowers patients to use their preferences to inform their treatment. Nonetheless, the potential bias from a single-surgeon study, as well as our small sample size, limits the external validity of this study. As this was a feasibility and usability study, patients were surveyed only at their index visit; further follow-ups to evaluate the effects of the tool on patient-reported outcomes are needed. Despite these limitations, the advantage of the preference elicitation tool is that it can be tailored to advances in the literature and surgeon-specific practice patterns. Future studies, with a larger sample size and longer follow-up times using the ranking preference tool, as well as other methods of preference elicitation, are needed to understand and inform patient decisions in hand surgery. Lastly, we included only English-speaking patients. This may exclude cultural preferences that are limited to those who do not speak English; however, after determining proof of concept, the tool may be expanded for use in other languages.

Considering these limitations, we found that a ranking preference elicitation tool is both feasible and usable at the point of care for patients being treated for trigger finger. In addition, the tool identified attributes on which individual patients make treatment decisions and elucidated differences in the importance assigned to various attributes between treatment choices. Although the preference elicitation tool does not supplant a discussion with patients, it may serve to engage and empower patients to make decisions aligned with their preferences and make the trade-offs between various treatment choices more apparent.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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FIGURE 1:

Total times each attribute was ranked 1, 2, and 3. Cumulative number of times each attribute was ranked most important to third most important by a patient. Patients value different attributes of treatment options.

TABLE 1.

Tool Creation

Attribute	Levels	Notes
Success rate	T: ~73% ^{38,39} I: 45% to 84% ^{28-30,31} S: 97% to 100% ^{32,33}	<ul style="list-style-type: none"> • Success rate was typically defined as the absence of subsequent injections or surgical release,²⁸ complete resolution of symptoms for the entirety of follow-up²⁹ • There is significant variation in definition of and follow-up for success rate of surgery in the literature. This review does not differentiate between digit involved or comorbid factors
Complication rate	T: Rare to none ³⁹ I: 0% to 1.6% ^{29,30} S: 3% to 37% (major: 3%, minor: 28%) ^{27,34}	<ul style="list-style-type: none"> • Primary reported complication of therapy is stiffness (up to 27%) that “resolved quickly”³⁹ • Most common complications of injections include cellulitis,³⁰ steroid flare, fat necrosis³⁶ • Most common complications of surgery include major: synovial fluid cyst requiring excision, arthrofibrosis; minor: wound complications, stiffness, pain²⁷
Immobilization time	T: nightly for ~3–9 wk I: none S: none	<ul style="list-style-type: none"> • Levels based on literature review demonstrating a range of immobilization from 3 to 9 wk in the therapy group³⁷
Pain associated with treatment	T: + I: ++ S: +++	<ul style="list-style-type: none"> • There is significant variation in definition and follow-up of pain associated with treatment in the literature^{5,27,35}
Treatment cost	T: \$ \$ I: \$ S: \$ \$ \$ ²	<ul style="list-style-type: none"> • Cost was discussed relative to other levels. When available, this discussion was put into the context of a patient’s remaining deductible
Anesthesia use	T: none I: none S: local or MAC + local	<ul style="list-style-type: none"> • Levels based on literature review and general practice patterns⁶

I, injection; S, open surgical release; T, therapy and orthosis.

TABLE 2.

Demographics

	Therapy	Injection	Surgery	Total
Total	5	20	5	30
Male/female	3/2	10/10	4/1	17/13
Mean age (y)	52.4	62.5	60.6	60.5

TABLE 3.

Overall Ranking

Attribute	Ranking			Percentage in top 3
	Most important	2nd most important	3rd most important	
Success rate	63.3%	23.3%	10.0%	96.7%
Complication rate	10.0%	26.7%	26.7%	63.3%
Immobilization time	16.7%	20.0%	10.0%	46.7%
Pain associated with treatment	3.3%	3.3%	30.0%	36.7%
Anesthetic use	6.7%	13.3%	16.7%	36.7%
Treatment cost	0%	13.3%	6.7%	20.0%