Development and Validation of a Novel Decision Aid for WALANT Hand Surgeries: Investigating Patient Preferences

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INTRODUCTION: Decision aids attempt to resolve uncertainty when multiple paths towards an outcome exist. The objective of the study is to develop and validate a novel decision aid packet (DAP) for hand surgery patients deciding between Wide-Awake-Local-Anesthesia-No-Tourniquet (WALANT) and traditional surgical modalities. In addition, the decision aid would allow for the investigation of patient preferences and considerations in regards to their surgical modality of choice. We hypothesize that the use of the decision aid improves patients' knowledge of their surgical modality options, lowers their decisional conflict, reduces regret after surgery, and reveals a preference towards the WALANT modality.

METHODS:

Decision Aid Packet (DAP) Development

The DAP and its corresponding Likert-scale questionnaire were developed following the International Patient Decision Aid Standards (IPDAS). The information included in the decision aid table was based on evidence-based research findings.

DAP Validation

Alpha Testing

Nine hand surgeons who are experienced in both WALANT and traditional surgical modalities and are members of the WALANT Research Consortium in the U.S. reviewed and provided feedback on the DAP along with its corresponding questions. Furthermore, seven patient advocate volunteers provided feedback regarding readability of the DAP.

Beta Testing

Patients at participating orthopedic clinics scheduled for hand surgeries that could be performed in either the WALANT or traditional manner were assigned to either a control or experimental group. Both experimental and control groups were given a standard six-item Orientation-Memory-Concentration Test (OMCT) to evaluate cognitive function before DAP administration. While the experimental group was given the DAP prior to surgery, the control group did not receive the decision aid. The experimental group was given a WALANT knowledge test before and after use of the decision aid. During their follow-up visits post-operatively, both groups completed a validated five-question regret scale. A paired T-test was conducted to analyze the difference between the average scores of the pre- and post-decision aid WALANT knowledge tests. An individual score was calculated for each of the five regret scale questions and differences between the average scores of the control and experimental groups were compared utilizing paired T-tests. Statistical significance was set at p-value less than 0.05.

RESULTS:

Of the nine surgeons consulted, seven provided general comments and specific edits over the course of three rounds of editing, utilizing the Delphi method. These changes were incorporated into the DAP and questionnaire. Additionally, the recommendations from the patient advocacy volunteers were integrated into the DAP to refine the readability and clarity.

The first cohort of fifty-eight patients from the experimental group demonstrated a 145% increase ($p<0.001$) in the average score on the WALANT knowledge test (Figure 1). 100% of the patients passed the cognitive function test. Forty-three (74%) of fifty-eight patients strongly preferred WALANT, while twelve (20.6%) preferred traditional surgery (Figure 2). Forty-seven out of fifty-eight patients (81%) demonstrated low decisional conflict on the validated decisional conflict survey. Additionally, the experimental group demonstrated significantly decreased regret scores on each of the five regret scale questions ($p<0.05$) when compared to the control group (Figure 3).

DISCUSSION AND CONCLUSION:

This study develops a novel decision aid for hand patients deciding between Wide-Awake-Local-Anesthesia-No-Tourniquet (WALANT) and traditional surgical modalities. An increased average score on the WALANT knowledge test following administration of the decision aid suggests that the DAP significantly improves patients' knowledge of their surgical modality options. A greater proportion of patients demonstrating low decisional conflict on the validated decisional conflict survey after use of the decision aid further suggests that usage of the DAP increases patients' confidence in their choice of surgical modality. Lower average regret scale scores of the experimental group in comparison with those of the control group indicate a relationship between usage of the decision aid and reduced regret following surgery. Furthermore, the greater rate of patient preference for WALANT following administration of the DAP, in conjunction with the lower postoperative regret, elucidates a general preference towards the WALANT modality. These findings reflect the necessity of a validated decision aid in order to provide information and guidance to patients who are faced with a decision between the two surgical modalities.

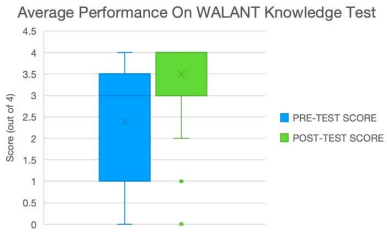

Figure 1. Comparison of Pre-Decision Aid and Post-Decision Aid knowledge scores (*n=58*)

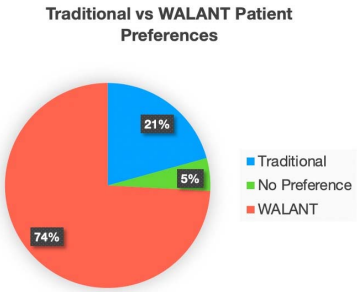

Figure 2. Patient preferences of WALANT vs Traditional surgical modalities following administration of the decision aid packet.

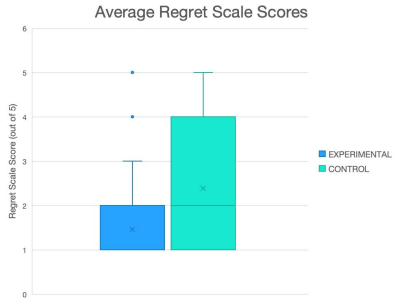

Figure 3. Comparison of experimental and control patients' responses to statement "I would go for the same choice if I had to do it again" (1-Strongly Agree, 2-Agree, 3- Neither Agree or Disagree, 4-Disagree, 5-Strongly Disagree) (n=107)