

Introduction

- Wide-awake local anesthesia no-tourniquet (WALANT) hand surgery has recently gained popularity due to its cost savings, safety, favorable outcomes, and high patient satisfaction
- However, the wide-awake nature of the technique causes many patients to experience anxiety during the procedure
- Non-orthopaedic studies have previously reported on the anxiolytic effects of intraprocedural music in a wide variety of wide-awake procedures
- The purpose of this prospective randomized controlled trial was to investigate whether wearing noise-canceling headphones and listening to music intraoperatively affects patient anxiety and satisfaction with wide-awake hand surgery
- We hypothesized that patients using noise-canceling headphones with music will have lower intraoperative anxiety and higher postoperative satisfaction

Materials and Methods

- Prospective, randomized controlled trial
- Consecutive patients were randomized to one of the following groups:
 - 1) Headphones Group that wore noise-canceling headphones and listened to the music type of their choice during surgery
 - 2) Control Group that neither wore noise-canceling headphones nor listened to music during surgery
- Patient anxiety was assessed on a 10-point visual analog scale (VAS) before, during, and after surgery, along with a patient satisfaction questionnaire
- Power analysis: 25 patients required in each group
- No difference in patient demographics between groups (Table 1)
- Similar procedure types between groups (Table 2)

Table 1
Patient Demographics

Variable	Headphones Group	Control Group	P Value
N	25	25	
Age, years (SD)	58.4 (10.4)	63.2 (12.8)	.155
Sex			.571
Male (%)	13 (52)	11 (44)	
Female (%)	12 (48)	14 (56)	
Diagnosis of anxiety at baseline (%)	5 (20)	6 (24)	.733

Table 2
Procedure Types in Each Study Group

Headphones Group	n	Control Group	n
CTR	7	CTR	8
TFR	6	TFR	8
CTR and TFR	2	Dupuytren's	2
Cyst removal	2	CTR and TFR	1
Dupuytren's	2	Cyst removal	1
Mass excision	2	DeQuervain release	1
Skin flap	2	DIP joint fusion	1
DeQuervain release	1	DIP joint debridement	1
DIP joint fusion	1	Mass excision	1
		Skin flap	1

DIP, distal interphalangeal; CTR, carpal tunnel release; TFR, trigger finger release.

Results

- No difference in pre-operative anxiety between groups (Figure 1)
- The Headphones Group was found to have significantly less intra-operative anxiety (Figure 1), and a significantly greater net decrease in anxiety (Figure 2) from the pre-operative to intra-operative level
- In the Headphones Group, 92% (23/25) of patients stated that they would recommend wearing noise-canceling headphones and listening to music to other WALANT hand surgery patients
- All (50/50) patients in both groups reported that they would choose to undergo WALANT hand surgery again

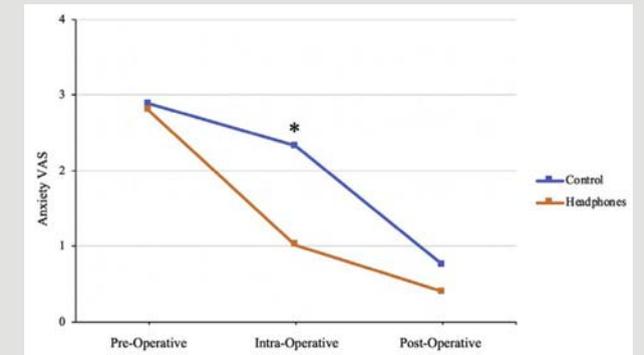


Figure 1: Pre-, intra-, and post-operative anxiety levels of both the headphone and control groups.
* = statistically significant

Postoperative Open-Ended Comments Made by Patients in the Headphones Group

- "The headphones got my mind off of the surgery."
- "The headphones were a welcome distraction from the procedure and really made a difference. I was able to take mind off the surgery. My anxiety went from an 8 to about a 2-3 after putting the headphones on."
- "I couldn't hear the surgeon, which was a good thing, good idea."
- "They made the experience better and took my mind off of everything."
- "I loved it because I couldn't hear the conversations."
- "It kept me relaxed."
- "They helped me a lot. It helped me concentrate on the music and not the surgery."
- "They very much so helped me relax."
- "They helped tremendously, definitely recommend, especially to people that have anxiety like I do."
- "I found it a nice distraction and gave me something else to think about. It really helped my anxiety."
- "I would have preferred catching up with the nurses instead." (Patient was a former operating room nurse.)

Patients who had WALANT hand surgery both with and without noise-canceling headphones and music:

- "The headphones made a big difference for me, it was much better than my other surgery."
- "I prefer the headphones a lot more. Hearing the crunching and zinging sounds wasn't for me."
- "I prefer no headphones. The banter was distracting when I had my other side done."

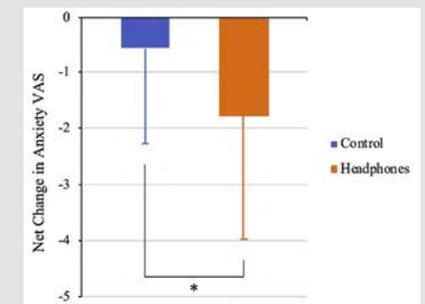


Figure 2: Net change in anxiety from the pre-operative to intra-operative level.
*Statistically significant.

Conclusion

- The use of noise-canceling headphones with music during WALANT hand surgery significantly decreases intraoperative patient anxiety
- Patient satisfaction with WALANT hand surgery was very high in both study groups
- This intervention represents an effective, safe, and inexpensive nonpharmacologic measure to improve patient anxiety and overall experience with WALANT hand surgery