

## OBJECTIVES

To study the effect of music therapy on patient anxiety and perceived pain during intrauterine insemination (IUI) procedures

Does music therapy change perceived pain and anxiety during IUI procedures?

## METHODS

**Design:** Randomized controlled trial performed between August 3, 2022 and September 29, 2023.

**Setting:** Academic infertility clinic and affiliated community site in the United States

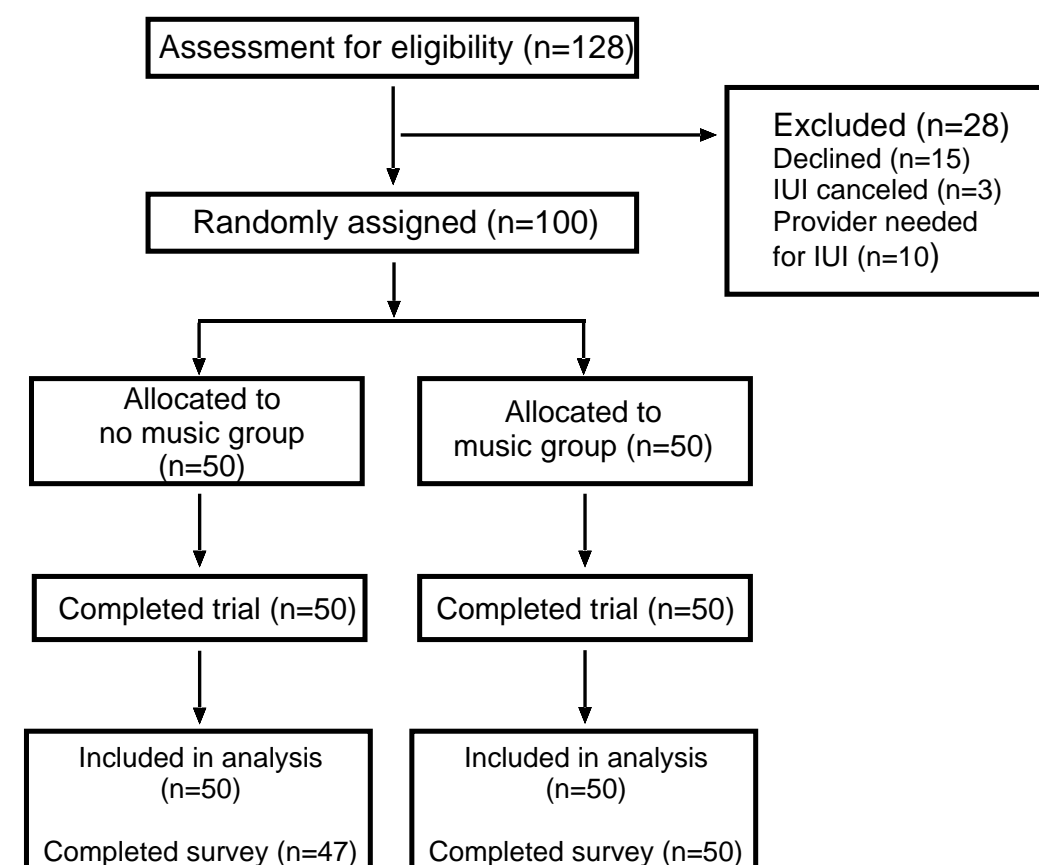
**Patients:** Patients 18 to 45 years of age who underwent IUI were included. We excluded patients who required a medical doctor to complete the IUI due to procedure difficulty (IUIs are routinely performed by nurses and advance practice providers at our institution), had already participated in the study during a prior IUI procedure, had significant hearing impairment, and those who required an interpreter as the consent form was available only in English.

100 patients were recruited and randomized to music and non-music groups

Table 1 Characteristics of Patients Exposed or Not Exposed to Music during IUI Procedure

	No Music (n=50)	Music (n=50)	p-value
Age	32.0 (3.9)	32.7 (3.7)	0.42 <sup>a</sup>
BMI	28.9 (6.3) <sup>b</sup>	29.3 (7.0) <sup>b</sup>	0.74 <sup>a</sup>
Race %			0.55 <sup>c</sup>
White	47 (94.0)	46 (92.0)	
Black	0 (0.0)	2 (4.0)	
Asian	2 (4.0)	2 (4.0)	
Other	1 (2.0)	0 (0.0)	
Infertility period, year	1.6 (0.8) <sup>b</sup>	1.7 (1.3) <sup>b</sup>	0.45 <sup>a</sup>
Previous IUI %	24 (48.0)	27 (54.0)	0.55 <sup>b</sup>
Number of Previous IUIs	1.8 (1.5)	2.5 (1.5)	0.07 <sup>a</sup>
FSH, IU/L	7.0 (4.3) <sup>b</sup>	7.5 (1.6) <sup>b</sup>	0.60 <sup>a</sup>
Estradiol, pg/ml	45.6 (29.5) <sup>b</sup>	45.7 (36.0) <sup>b</sup>	1.00 <sup>a</sup>
AMH, ng/ml	3.1 (2.4) <sup>b</sup>	2.8 (2.1) <sup>b</sup>	0.58 <sup>a</sup>
Antral follicle count	22.2 (13.9) <sup>b</sup>	18.3 (11.9) <sup>b</sup>	0.18 <sup>a</sup>
GAD-7 score	2.8 (3.4) <sup>b</sup>	2.5 (3.6) <sup>b</sup>	0.67 <sup>a</sup>
Cycle Protocols %			0.21 <sup>b</sup>
Clomiphene Citrate	32 (64.0)	37 (75.5) <sup>b</sup>	
Letrozole	12 (24.0)	5 (10.2)	
Natural Cycle	6 (12.0)	7 (14.3)	

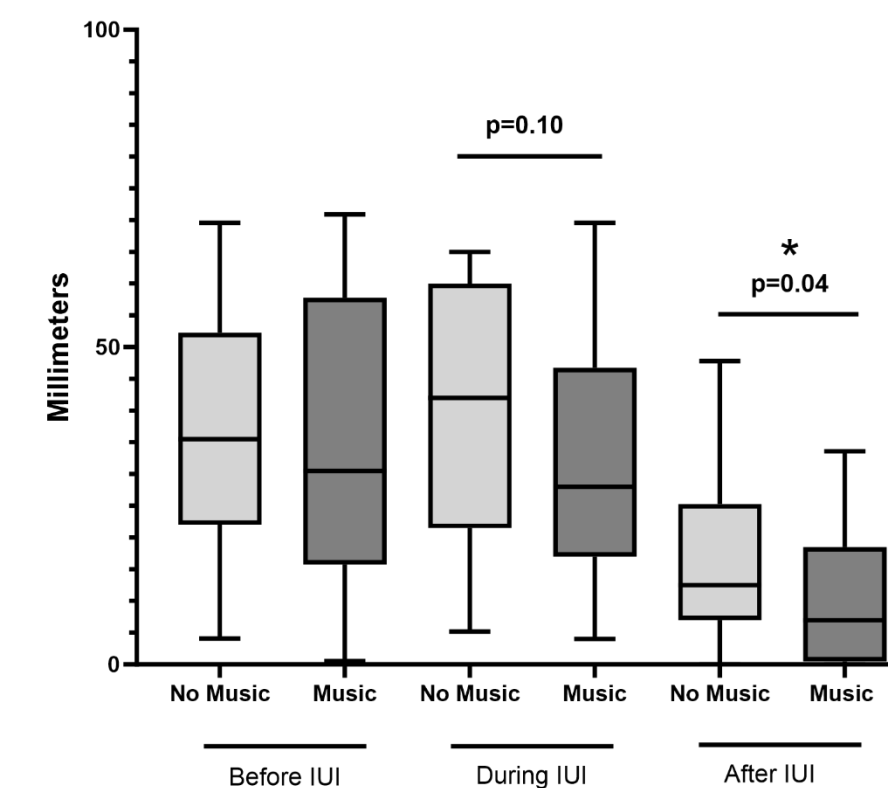
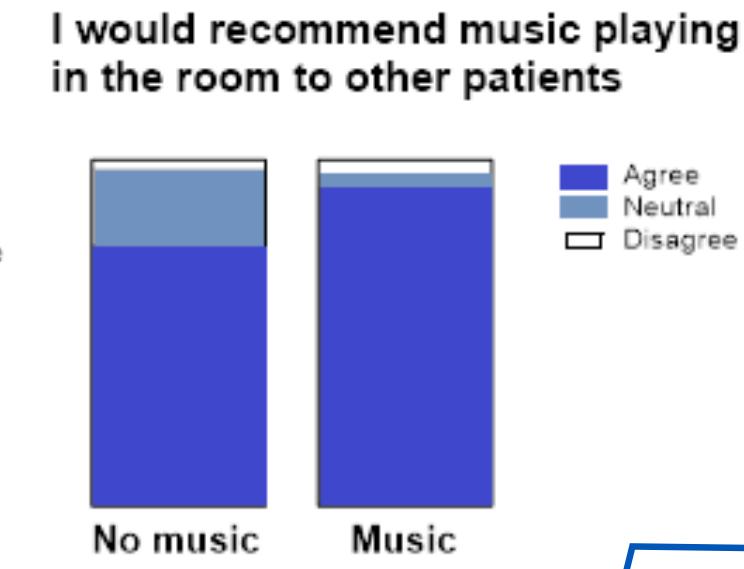
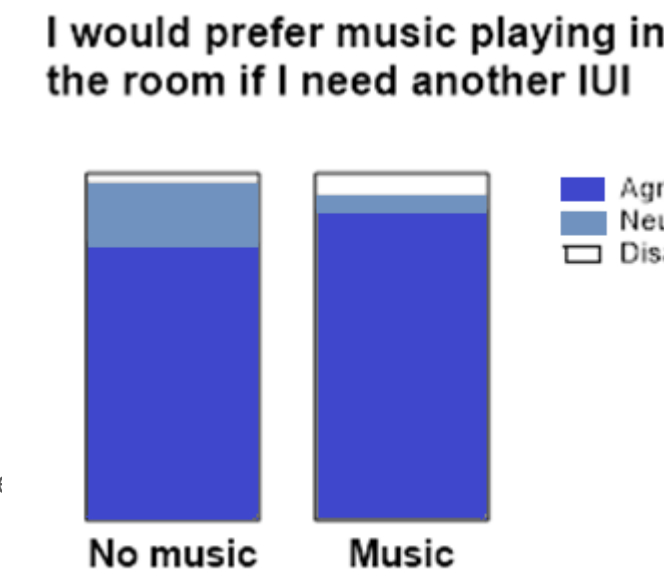
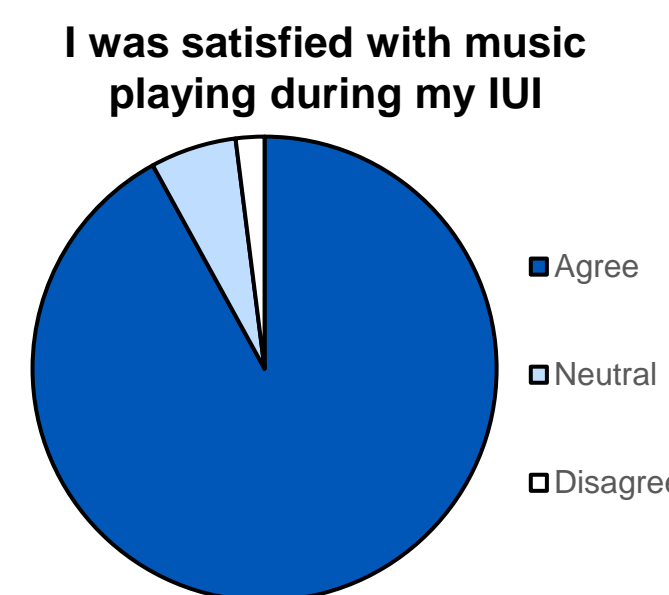
No significant differences in patient demographics were noted between groups



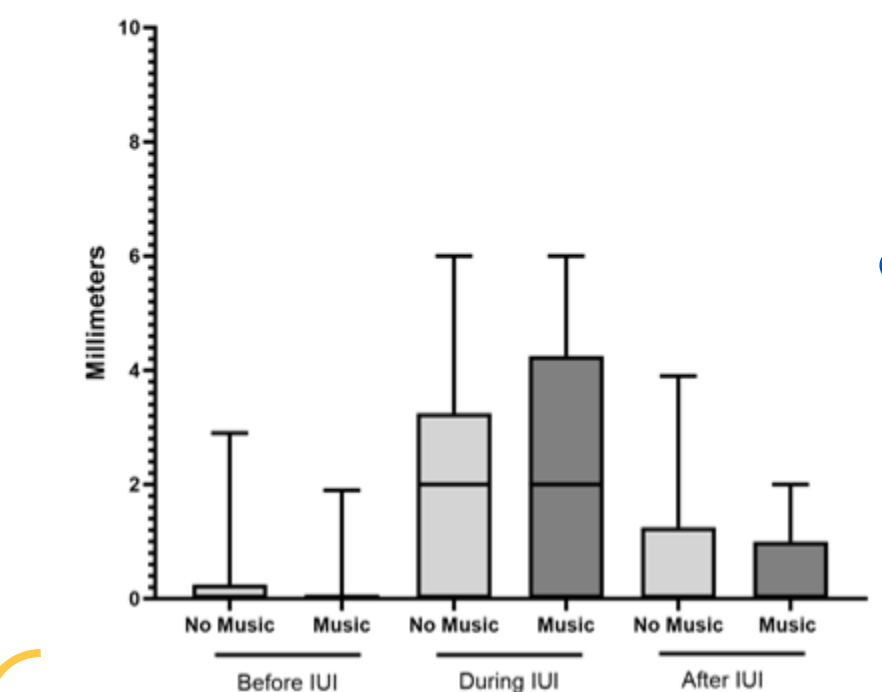
Pain and Anxiety were assessed pre-, during, and post-procedure with a Wong Baker Pain Scale and 100mm Visual Analog Scale, respectively

	Group		Cohen's d	p-value	FDR
	No Music (n = 50)	Music (n = 50)			
Before IUI	37.1 (31.1, 43.2)	34.9 (27.9, 41.9)	-0.1 (-0.5, 0.3)	0.63	0.63
During IUI	40.5 (34.2, 46.8)	32.9 (26.1, 39.7)	-0.3 (-0.7, 0.1)	0.10	0.24
After IUI	18.6 (13.6, 23.5)	12.0 (8.3, 15.8)	-0.4 (-0.8, 0.02)	0.04	0.22

Lower anxiety scores were reported post-procedure in music therapy group compared to nonmusic controls (12.0, 95% CI [8.3, 15.8] vs. 18.6, 95% CI [13.6, 23.5], p=0.04)



	Group		Cohen's d	p-value	FDR
	No Music (n = 50)	Music (n = 50)			
Before IUI	0.5 (0.2, 0.8)	0.3 (0.1, 0.6)	-0.2 (-0.6, 0.2)	0.35	0.47
During IUI	2.3 (1.7, 2.9)	2.7 (2.0, 3.4)	0.2 (-0.2, 0.6)	0.39	0.47
After IUI	1.1 (0.6, 1.6)	0.6 (0.3, 1.0)	-0.3 (-0.7, 0.1)	0.12	0.24



There were no differences in pain between groups

## CONCLUSION

- Patients who listened to music during IUI reported lower anxiety scores at the conclusion of the procedure and had high satisfaction rates.
- No differences in pain were noted based on music intervention.

## REFERENCES

F. Szkodziak, J. Krzyzanowski, and P. Szkodziak, "Psychological aspects of infertility. A systematic review," *J Int Med Res*, vol. 48, no. 6, p. 30060520932403, Jun 2020, doi: 10.1177/0300060520932403.

[2] A. M. Braverman, T. Davoudian, I. K. Levin, A. Bocage, and S. Wodostawsky, "Depression, anxiety, quality of life, and infertility: a global lens on the last decade of research," *Fertil Steril*, vol. 121, no. 3, pp. 379-383, Mar 2024, doi: 10.1016/j.fertnstert.2024.01.013.

[3] A. D. Domar, K. Rooney, M. R. Hacker, D. Sakkas, and L. E. Dodge, "Burden of care is the primary reason why insured women terminate in vitro fertilization treatment," *Fertil Steril*, vol. 109, no. 6, pp. 1121-1126, Jun 2018, doi: 10.1016/j.fertnstert.2018.02.130.

[4] J. Clifton, J. Parent, M. Soehnius, G. Worrall, R. Forehand, and A. Domar, "An internet-based mind/body intervention to mitigate distress in women experiencing infertility: A randomized pilot trial," *PLoS One*, vol. 15, no. 3, p. e0229379, 2020, doi: 10.1371/journal.pone.0229379.