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Date: 2015-03-21

Question: Should music distraction vs control/no treatment be used for reducing vaccine injection pain in children >3 - 12 years?^{1,2,3}

Settings: clinic

Bibliography: Fowler-Kerry 1987 (2,4), Megel 1998, Noguchi 2006 (1,2), Yinger 2012

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Music/auditory distraction	Control/no treatment	Relative (95% CI)	Absolute		
Pain⁴ (measured with: validated tools (Visual Analog Scale 0-3, Faces Scale 0-6, Oucher Pain Scale 0-5); Better indicated by lower values)												
3	randomised trials	serious ⁵	no serious inconsistency	no serious indirectness	serious ⁶	none	172	189	-	SMD 0.45 lower (0.71 to 0.18 lower) ⁴	⊕⊕○○ LOW	CRITICAL
Distress Pre-procedure^{4,7,8} (measured with: validated tools (Child-Adult Medical Procedure Interaction Scale-Revised 0-1, Observational Scale of Behavioural Distress) by researcher ; Better indicated by lower values)												
2	randomised trials	serious ⁵	no serious inconsistency	no serious indirectness	serious ⁶	none	71	47	-	SMD 0.48 lower (0.86 to 0.1 lower) ^{4,7,8}	⊕⊕○○ LOW	IMPORTANT
Distress Acute^{4,7,9} (measured with: validated tools (Child-Adult Medical Procedure Interaction Scale-Revised 0-1, Faces Scale 0-6) by researcher ; Better indicated by lower values)												
2	randomised trials	serious ⁵	no serious inconsistency	no serious indirectness	serious ⁶	none	71	47	-	SMD 0.49 lower (0.87 to 0.11 lower) ^{4,7,9}	⊕⊕○○ LOW	IMPORTANT
Distress Recovery^{4,7,8} (measured with: validated tools (Child-Adult Medical Procedure Interaction Scale-Revised 0-1, Observational Scale of Behavioural Distress) by researcher ; Better indicated by lower values)												
2	randomised trials	serious ⁵	no serious inconsistency	no serious indirectness	serious ¹⁰	none	71	47	-	SMD 0.09 lower (0.46 lower to 0.29 higher) ^{4,7,8}	⊕⊕○○ LOW	IMPORTANT
Distress Acute + Recovery^{4,7,8} (measured with: validated tools (Child-Adult Medical Procedure Interaction Scale-Revised, Observational Scale of Behavioural Distress) by												

researcher ; Better indicated by lower values)												
2	randomised trials	serious ⁵	no serious inconsistency	no serious indirectness	serious ¹⁰	none	71	47	-	SMD 0.27 lower (0.65 lower to 0.1 higher) ^{4,7,8}	⊕⊕○○ LOW	IMPORTANT
Procedure Duration (measured with: validated tool (measurement of procedure duration in seconds) by researcher; Better indicated by lower values)												
1	randomised trials	serious ¹¹	no serious inconsistency	no serious indirectness	serious ¹⁰	none	29	27	-	SMD 0.20 higher (0.33 lower to 0.72 higher)	⊕⊕○○ LOW	IMPORTANT
Child Use of Intervention Pre-procedure⁷ (measured with: validated tool (Child-Adult Medical Procedure Interaction Scale-Revised) by researcher ; Better indicated by higher values)												
1	randomised trials	serious ¹¹	no serious inconsistency	no serious indirectness	serious ⁶	none	29	27	-	SMD 1.36 higher (0.78 to 1.95 higher) ⁷	⊕⊕○○ LOW	IMPORTANT
Child Use of intervention Acute + Recovery⁷ (measured with: validated tool (Child-Adult Medical Procedure Interaction Scale-Revised) by researcher ; Better indicated by higher values)												
1	randomised trials	serious ¹¹	no serious inconsistency	no serious indirectness	serious ⁶	none	29	27	-	SMD 0.90 higher (0.34 to 1.45 higher) ⁷	⊕⊕○○ LOW	IMPORTANT
Parent Preferences¹² (measured with: questionnaire; Better indicated by lower values)												
1	randomised trials	serious ¹¹	no serious inconsistency	no serious indirectness	¹³	none	29	-	⁻¹²	not pooled ¹²		IMPORTANT
Fear (assessed with: no data were identified for this critically important outcome)												
0	No evidence available					none	-	-	-	-		CRITICAL
Parent Fear, Vaccine Compliance, Memory, Preference, Satisfaction (assessed with: no data were identified for these important outcomes)												
0	No evidence available					none	-	-	-	-		IMPORTANT
								0%		-		

¹ In study by Noguchi (2006), analysis (1) compared musical storytelling with no treatment and analysis (2) compared auditory storytelling with no treatment. Children in the treatment groups were instructed and practiced prior to the procedure

² In study by Fowler Kerry, analysis (2) compared music distraction with no treatment and analysis (4) compared music distraction and suggestion with suggestion

³ In study by Yinger (2012), children were instructed in music therapy by a music therapist and practiced prior to the procedure

⁴ In study by Noguchi (2006), the sample size in the control group was divided by 2

⁵ Inconsistent blinding of participants, immunizers; inconsistent blinding of outcome assessors

⁶ Sample size was below the recommended optimum information size (OIS) of 400 for an effect size of 0.2

⁷ In study by Yinger (2012), proportion scores used; range assumed to be 0-1)

⁸ In study by Noguchi (2006), scores were not standardised

⁹ In study by Noguchi (2006), only Faces pain scores included in this analysis

¹⁰ Confidence interval crosses the line of nonsignificance and sample size was below the recommended optimum information size (OIS) of 400 for an effect size of 0.2

¹¹ There is no blinding

¹² In study by Yinger (2012), 23 out of 29 (79%) parents in the intervention (music) group indicated they would use the intervention again in the future

¹³ Data not pooled