Management of Dental Anxiety via Distraction Technique

Torres-Gomez J, Hoopes W, Arnason S, Vandewalle K

USAF, JBSA-Lackland, TX, USA

ABSTRACT #

INTRODUCTION

One persistent challenge that remains for both the patient and practitioner in delivering dental care is dental anxiety. It can even perpetuate a cycle where dental care is only sought out in efforts to resolve dental pain, further creating traumatic experiences that reinforce patients dental anxiety. The use of music and video distraction techniques have been demonstrated to be statistically significant in reducing dental anxiety. Attempts to teach patients to restructure how they perceive negative thoughts through cognitive refocusing have also been successful. Yet a simpler method of distraction, such as the use of stress balls, is a neurocognitive-theory-based approach where pain perception is moderated by the demands of an unrelated pain-free task. However, the application of stress balls as a touch distraction method has yet to be studied in a dental setting.

OBJECTIVE

The purpose of this randomized human study was to evaluate the use of stress balls as a distraction technique and how it affects stress levels of patients undergoing routine scaling and root planning procedures under local anesthesia. Pain reduction during dental treatment could potentially increase dental readiness by reducing patients' fear of dental pain, leading to fewer appointment cancellations. The null hypothesis to be tested was that there would be no significant difference in pain scales and galvanic skin response with scaling and root planing with local anesthesia with or without the use of stress balls.

MATERIALS and METHODS

A randomized, split-mouth design was conducted using 20 adult subjects requiring scaling and root planing (Sc/RP) in all four quadrants. Each side of the mouth (maxillary/mandibular) received Sc/RP with local anesthetic with or without the use of a stress-ball distraction over two separate sessions. Subjects completed two pre-procedural questionnaires (Spielberger State-Trait Anxiety Inventory, STAI; Modified Dental Anxiety Scale, MDAS) before and after at each treatment session.

MATERIALS and METHODS (cont.)

A Galvanic Skin Response (GSR) sensor (Neulog) was used throughout each session to measure skin conductance or sweat, with Velcro connectors wrapped around two different fingers on the hand opposite the hand using the stress ball. GSR scores were evaluated using a Paired T-test and STAI and MDAS scores were evaluated using a Wilcoxon Signed Rank Test (alpha=0.05). See figure below.
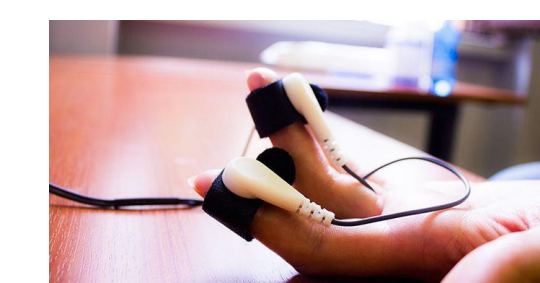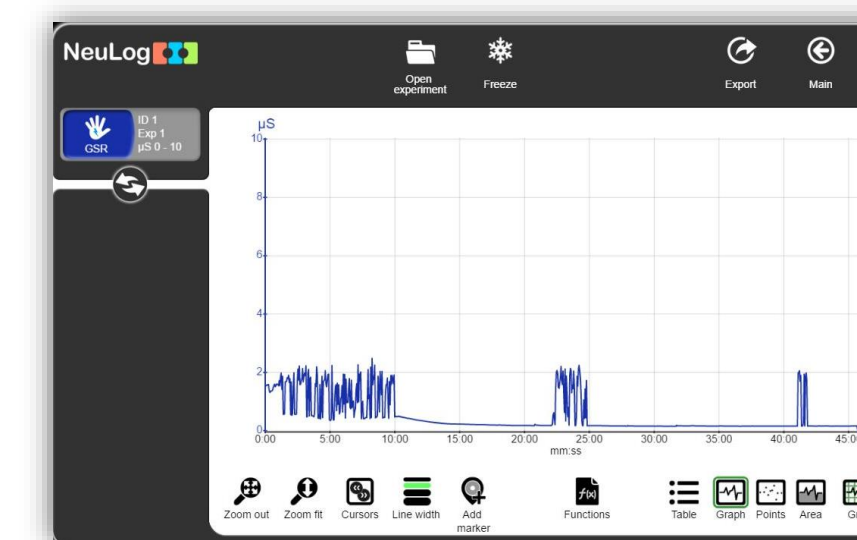
RESULTS

No significant difference in GSR (p=0.12) was found during treatment with or without the use of the stress ball With or without the use of a stress ball, no difference in STAI or MDAS scores was found before and after treatment.

Galvanic Skin Response (µS) (mean, st dev)			
	No Stress Ball	Stress Ball	P value
GSR	1.03 (0.78)	0.89 (0.62)	0.12

Spielberger State-Trait Anxiety Inventory and Modified Dental Anxiety Scale (median, IQR)							
	No Stress Ball		P value	Stress Ball		P value	
	Before	After		Before	After		
STAI	28.3 (28.2)	30.0 (23.0)	0.13	30.0 (12.6)	25.0 (19.2)	0.33	
MDAS	11.0 (6.0)	10.0 (5.5)	0.16	11.0 (4.5)	10.5 (5.8)	0.72	

CONCLUSIONS

The results of this study found that the use of a stress ball as a distraction technique did not result in any significant reduction in stress levels in subjects undergoing scaling and root planing with local anesthetic.