

Effectiveness of Squeeze Ball Exercise on Level of Anxiety Among Patients Undergoing Upper Gastrointestinal Endoscopy

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Abstract

The aim of the present study was to determine “Effectiveness of squeeze ball exercise on level of Anxiety Among Patients Undergoing Upper Gastrointestinal Endoscopy”. The primary objectives of the study were to determine the effectiveness of squeeze ball exercise on level of anxiety among patients undergoing upper GI endoscopy by comparing the anxiety level between experimental and control group, to find out the association between the pre test score and post test score on level of anxiety among patients undergoing GI endoscopy in experimental group with their selected demographic variables. Quasi experimental pre-test-post-test control group design was used in this study. Consecutive sampling technique was used to select 100 samples. Data were collected using State Trait Anxiety Inventory and Socio demographic questionnaire. Only experimental group was provided with the intervention, that is squeeze ball exercise were given 10 min prior to procedure and continue during the endoscopy, and for the control group no interventions were given. Post test was conducted for both interventional and control group. Data was analyzed using descriptive and inferential statistics. The independent t test is used to analyse the data and the result showed that the score significantly differ between the groups (‘t’ value 13.28 p=0.001). So it can be concluded that Squeeze ball exercise is effective in reducing anxiety during endoscopy. There is a significant association between demographic variables and pre-test anxiety level among patients undergoing upper gastrointestinal endoscopy. The study concluded that Squeeze ball exercise is effective on level of anxiety among patients undergoing upper gastrointestinal endoscopy.

Keywords: Effectiveness; Squeeze ball exercise; Anxiety; State Trait Anxiety Inventory)

INTRODUCTION

Upper gastrointestinal (UGI) endoscopy is a common diagnostic and therapeutic procedure used to visualize the esophagus, stomach, and duodenum. Despite its clinical importance, the procedure is often associated with significant anxiety among patients due to fear of discomfort, gagging, unfamiliar equipment, and uncertainty about the findings. Elevated anxiety levels before and during endoscopy can negatively influence patient cooperation, increase perceived pain, prolong procedure time, and may lead to avoidance of future diagnostic procedures.

Anxiety is a normal psychological response to invasive medical procedures; however, unmanaged anxiety can result in adverse physiological responses such as increased heart rate, elevated blood pressure, and muscle tension. Therefore, reducing anxiety in patients undergoing upper GI endoscopy is an important aspect of patient-centered care. While pharmacological interventions such as sedatives are commonly

used, they may be associated with side effects, increased cost, and the need for additional monitoring. Non-pharmacological interventions are increasingly being explored as safe, cost-effective, and easy-to-administer methods for anxiety reduction. One such intervention is the use of a squeeze ball exercise, which involves rhythmic hand squeezing to provide distraction and promote relaxation. This simple technique may help reduce anxiety by diverting attention, decreasing muscle tension, and enhancing a sense of control during the procedure. The squeeze ball exercise is inexpensive, non-invasive, and can be easily implemented by healthcare professionals without specialized training. Therefore, this study aims to assess the effectiveness of squeeze ball exercise on the level of anxiety among patients undergoing upper gastrointestinal endoscopy, with the goal of improving patient comfort and overall procedural experience.

OBJECTIVES OF THE STUDY

- To determine the effectiveness of squeeze ball exercise on level of anxiety among patients undergoing upper GI endoscopy by comparing the anxiety level between experimental and control group.
- To find out the association between the pre test score and post test score on level of anxiety among patients undergoing GI endoscopy in experimental group with their selected demographic variables

HYPOTHESIS

H₁: There will be a significant reduction in the level of anxiety among patients undergoing upper GI endoscopy in experimental group as compared to control group after providing squeeze ball.

H₂: There will be a significant association between pretest post-test score on level of anxiety among patients undergoing GI endoscopy with their selected demographic variables.

MATERIAL AND METHOD

Research approach: Quantitative approach

Research design: Quasi experimental pre-test post-tests with control group design.

Setting: Endoscopy unit of PRS Hospital, Kilippalam

Population: Patients undergoing upper GI endoscopy.

Sample: Patients undergoing upper GI endoscopy at PRS Hospital, Kilippalam

Sample size: Hundred out of which, 50 in experimental group and 50 in control group.

Sampling technique: Consecutive selection satisfying inclusion and exclusion criteria.

Inclusion criteria

Age group 20-70 yrs.

Both genders.

First time exposure to upper GI endoscopy.

Patients who give consent to participate in this study.

Exclusion criteria

Patient who are critically ill.

Previous experience

Age below 20 and above 70 years

Patient who are undergoing routine relaxation technique like yoga, meditation etc

Tools and technique: Socio-demographic questionnaire and State Trait Anxiety Inventory.

Plan for data collection

Pre test: Pre-test was conducted by using State Trait Anxiety Inventory before endoscopic procedure.

	Private job	5.302	10	0.871
	Govt. Job			
	Entrepreneur			
	Unemployed			
Previous history	Yes	22.36	2	0.000139
	No			
Relaxation technique	Yes	22.36	2	0.000139
	No			

DISCUSSION

Section 1: Description of comparison of the effectiveness of squeeze ball exercise on anxiety among patients undergoing upper gastrointestinal endoscopy between experimental and control group.

The mean pre intervention score in the experimental group was 50 (SD 4.3) and that of control group was 54 (SD 5.43). This difference was found to be statistically significant on ‘t’ test (‘t’ value 13.28 p=0.001). Since the pre-intervention anxiety score was significantly different in the two groups, pre-post difference of each individual was calculated for both groups and the mean of this difference in each group was considered for comparison.

The mean of post difference in score in the experimental group was 36.9 (SD 5.1) and that of control group was 53 (SD 5.49). This difference was found to be statistically significant on ‘t’ test (‘t’ value 3.068 p=0.0035). so, it can be concluded that squeeze ball exercise is effective in reducing anxiety during endoscopy.

Section 2: Description of the association between Pre-test post-test score on level of anxiety among patients undergoing upper GI endoscopy with their selected demographic variables

Among samples there is no evidence of significant association between variables of the study such as age, gender, education, marital status, occupation, previous history of endoscopy and use of relaxation technique with the intervention level of anxiety.

LIMITATION

- Included only 100 Patients undergoing upper GI endoscopy.
- Included only one problem i. e; anxiety.

CONCLUSION

The present study reveals that majority of the patients undergoing upper gastrointestinal endoscopy experience moderate to severe anxiety during endoscopy and squeeze ball exercise had shown to decrease the level of anxiety. The study also reveals that there is significant reduction in anxiety after implementing squeeze ball exercise.

ACKNOWLEDGEMENT

The author is extremely grateful to the study participants, organization for permitting to conduct the study.

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