Assessing the Relationship between Patient's Anxiety Level and Pain Experienced during Dental Extraction under Local Anaesthesia

Nivaasini Sivarajah

Saveetha Dental College

Abstract: Pain is usually associated to dental care and several factors may influence its perception because it is a complex process. Dental anxiety is one of the commonly feared situation which affects patient's response towards upcoming dental visits and it usually generates stress that can create significant problems especially for those who are medically compromised. The reason of this study is to find out any relationship between anxiety and pain, if there is the treatment modalities can be changed for example, anxious patient can be treated under sedatives.

Keywords: dental, extraction, pain, anxiety, local anaesthesia

1. Introduction

An ideal tooth extraction defined as painless removal of the whole tooth or root with minimal trauma to the investing tissues so that the wound heals uneventfully and no post operative prosthetic problem created (Geoffray L Howe). Extractions of tooth is done in conditions such as deep caries, apical osteitis, root fractures, extremely deep periodontal pockets and acute local infections associated with the tooth¹.Extraction is a method by which a tooth is removed from its socket after creating a flap and removing the part of bone that surrounds the teeth. Pain during dental treatment is more associated to invasive procedures, tooth extractions and surgeries, but it may also be associated to noninvasive procedures. Administrating Local anesthesia is referred to as a painful procedure generating anxiety. Anxiety is determinant for pain during dental care and pain is related to local anesthetic administration procedures². Extraction of teeth may result in few complicated conditions such as tooth fracture, abruption of alveolar wall, abruption of maxillary tuber, injury to the neighbouring tooth, injury to the tooth in contra lateral jaw, luxation of tooth bud, jaw fracture, nerve injury, intrusion, swallowing of tooth and tooth aspiration³.

2. Material and method

Study design & Settings –This study design is based on data collected from patients who underwent extraction in Saveetha Dental College Chennai.

Study Participants -60 questionnaire are been filled up based on patients who reported at Saveetha Dental College who underwent extractions due to pulpitis, mobility, root stump, periodontal disease, fractured teeth, etc.

Data Collection: Study was conducted on patients who visited Saveetha Dental College Chennai for dental extraction. The questionnaire has been issued to the patient which has data like, Age, SEX, Anxiety level, Pain scale to assess the relationship between pain and anxiety during dental extraction. Anxiety was measured using the Hamilton

Anxiety Rating Scale where 0 was rated as no Anxiety,1 was rated as mild anxiety,2 was rated as Moderate Anxiety ,3-severe Anxiety and 4 is very Severe Anxiety and pain was measured using the Pain Visual Analouge Scale.

3. Results

Regression Analysis: Anxiety Vs. Pain

The regression analysis was carried out to obtain the relationship between pain and anxiety level. It is evident from the above table that the $R^2 = 0.605$ which means that the independent variable (Anxiety) explains 60.50 per cent of the variability of the dependent variable (Pain) with significant 't' value. This supports the conclusion that an increase in pain level has been associated with an increase in anxiety level. The collected data was analysed with Statistical Package for Social Sciences for Windows, Version 16.0,(SPSS Inc., Chicago, IL,USA).To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and the mean & S.D were used for continuous variables. To find the significance in categorical data Chi-Square test was used. In the above statistical tool the probability value .05 is considered as significant level.

4. Frequency

	Sex										
		Fraguancy	Dercent	Valid	Cumulative						
		riequency reicent	reicent	Percent	Percent						
	Male	29	48.3	48.3	48.3						
Valid	Female	31	51.7	51.7	100						
	Total	60	100	100							

	Anxiety											
		Eroquanau	Doroont	Valid	Cumulative							
		Frequency	reicent	Percent	Percent							
	No anxiety	5	8.3	8.3	8.3							
	Mild	19	31.7	31.7	40							
Valid	Moderate	23	38.3	38.3	78.3							
	Severe	13	21.7	21.7	100							
	Total	60	100	100								

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	Pain											
		Fraguancy	Dorcont	Valid	Cumulative							
		riequency	reicein	Percent	Percent							
	0	5	8.3	8.3	8.3							
	1	4	6.7	6.7	15							
	2	3	5	5	20							
	4	1	1.7	1.7	21.7							
Valid	5	18	30	30	51.7							
	6	3	5	5	56.7							
	7	7	11.7	11.7	68.3							
	8	19	31.7	31.7	100							
	Total	60	100	100								

Descriptive

	Descriptive Statistics											
N Minimum Maximum Mean Std. Deviation												
Age	60	21	74	42.6	13.478							
Valid N (listwise)	60											

Sex = Male

Descriptive Statistics ^a											
N Minimum Maximum Mean Std. Deviation											
Age	29	21	74	45.28	14.217						
Valid N (listwise)	29										
	a. Sex = Male										

Sex = Female

Descriptive Statistics ^a											
	Std.										
	Ν	Minimum	Maximum	Mean	Deviation						
Age	31	21	60	40.1	12.459						
Valid N	31										
(listwise)	(listwise)										
a. Sex = Female											

Crosstabs

	Anxiety * Pain Crosstabulation											
	Count											
	Pain							Total				
		0	1	2	4	5	6	7	8	Total		
	No anxiety	2	2	0	0	1	0	0	0	5		
Anviaty	Mild	3	1	2	1	7	1	0	4	19		
Allxlety	Moderate	0	1	0	0	10	2	5	5	23		
	Severe	0	0	1	0	0	0	2	10	13		
Г	Total	5	4	3	1	18	3	7	19	60		

Chi-Square Tests									
Value df Asymp. Sig. (2-sided									
Pearson Chi-Square	48.257 ^a	21	0.001						
Likelihood Ratio	51.944	21	0						
Linear-by-Linear Association	22.356	1	0						
N of Valid Cases	60								
a. 28 cells (87.5%) have expected count less than 5. The minimum expected count is .08.									

Nonparametric Correlations

		Correlations		
			Anxiety	Pain
Spearman's	Anxiety	Correlation	1	.605**
rho		Coefficient		
		Sig. (2-tailed)		0
		Ν	60	60
	Pain	Correlation	.605**	1
		Coefficient		
		Sig. (2-tailed)	0	
		Ν	60	60
**. Correla	tion is sig	nificant at the 0.01	level (2-ta	iled).

Regression

Variables Entered/Removed ^a									
Model Variables Entered Variables Removed Method									
1	1 Anxiety ^b Enter								
	a. Dependent Variable: Pain								
	b. All requested variables entered.								

Model Summary

	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
	1	.616 ^a	0.379	0.368	2.096			
a. Predictors: (Constant), Anxiety								

	ANOVA ^a										
	Model	Sum of Squares	df	Mean Square	F	Sig.					
	Regression	155.425	1	155.425	35.39	.000 ^b					
1	Residual	254.758	58	4.392							
	Total	410.183	59								
	a. Dependent Variable: Pain										
	b. I	Predictors: (Consta	ant), Anxiet	ty						

Coefficients ^a						
	Model	Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
1	(Constant)	2.256	0.591		3.814	0
	Anxiety	1.804	0.303	0.616	5.949	0
a. Dependent Variable: Pain						

5. Discussion

Extraction is a method by which a tooth is removed from its socket after creating a flap and removing the part of bone that surrounds the teeth². Pain during dental treatment is more associated to invasive procedures, tooth extractions and surgeries, but it may also be associated to noninvasive procedures. Local anesthesia is referred to as a painful procedure generating anxiety⁵. Anxiety is determinant for pain during dental care and pain is related to local anesthetic procedures.³ This study was done to assess the relationship between pain and anxiety during dental extraction.60 ramdom patients are selected who are have got their tooth extracted due to varies problems ,questionnaire has been issued to the patients which has the data like anxiety level and pain level. Then it has been calculated by statistical analysis in which $R^2 = 0.605$ which means that the independent variable (Anxiety) explains 60.50 per cent of the variability of the dependent variable (Pain) with significant 't' value. This supports the conclusion that an increase in pain level has been associated with an increase in anxiety level. According to null hypothesis, the calculated

Volume 6 Issue 5, May 2017 www.ijsr.net Licensed Under Creative Commons Attribution CC BY value of (X^2) is greater than the table value, the null hypothesis is rejected. On the basis sample data we can therefore conclude that there is association between pain and anxiety level. The correlation between pain and anxiety is 0.605. It reveals that, there is a high degree of positive correlation between these two variables. So, the pain level depends upon anxiety level. If the anxiety level increases the pain level will be increased.

6. Conclusion

This study is done to assess the relationship between patient's anxiety and pain during dental extraction under local anaesthesia. Dental anxiety is the best defined variable to determine pain awareness during treatment and painful sensation is related to local anaesthetic procedures. With the statistical values it has been assessed that pain level depends on anxiety and if the anxiety level increases the pain level will be increased.

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