

## **EVALUATION OF KNOWLEDGE OF TOOTH BLEACHING** **AMONG PATIENTS-A QUESTIONNARE BASED STUDY**

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### **AIM:**

The aim of this research is to evaluate the knowledge of tooth bleaching among patients.

### **OBJECTIVE:**

The main objective of this study is to assess the knowledge of the patient visiting dental hospital about dental bleaching .

### **BACKGROUND:**

Tooth discoloration is deviation of tooth color from the normal which is white to yellowish white. Among tooth whitening methods, tooth bleaching is considered the simplest, most conservative and least expensive treatment option. Bleaching is basically lightening of tooth color through application of a chemical agent to oxidize the organic pigmentation. Nowadays bleaching is mainly based on use of hydrogen peroxide in varying concentrations.

### **METHODOLOGY:**

Data was to be collected from 100 patients visiting dental clinic using a structured questionnaire consisting of 13 item questionnaire.

### **CONCLUSION:**

Based on the questionnaire, among the 85 participants ; nearly 40% of responses were positive which clearly shows the existing knowledge and willingness towards dental bleaching. But there still exists certain doubts and misconceptions regarding the fidelity, prices and longevity of bleaching procedure and products which can be cleared through proper awareness and education to the patients visiting a dental set up.

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## **INTRODUCTION:**

Tooth discolouration is classified as intrinsic and extrinsic discoloration. Intrinsic discolouration develops at the time of tooth. Extrinsic discolouration develops after the tooth formation.(1)Drugs like tetracycline, high levels of fluoride and exposure to certain metals during tooth formation causes intrinsic staining .These stains are non-responsive to abrasives and home use bleaching agents. Whereas certain foods such as tea, coffee and tar products from tobacco and certain occupational exposure to metals cause extrinsic stains and many times these stains are responsive to home use of bleaching agent.(2)Since the introduction of a tooth whitening technique that uses custom tray loaded with 10 percent carbamide peroxide 15 years ago, the demand for information and treatment on tooth bleaching has increased (3).In recent years, the introduction of over- the-counter bleaching gels has multiplied the popularity of tooth whitening (4).Tooth bleaching has changed patients' attitudes and feelings towards dentistry with a new appreciation of how easily their aesthetics can be improved.

This study mainly focuses on dental patients rather than general public, thus limiting their generalizability of results to the wider population. With advancement in restorative dentistry, many techniques have become economical and cost effective for both developed and developing countries and one of such technique is tooth bleaching. Nowadays, tooth bleaching becomes cost effective and conservative with added advantages of long term functionality and effectiveness. Hence, the aim of this study was to evaluate the attitude and awareness of tooth bleaching among the adult population.

## **MATERIALS AND METHOD :**

A cross sectional questionnaire to determine the knowledge of tooth bleaching among patients was designed .Data were collected from 100 patients of Saveetha dental college, Chennai. There are 15 direct questions regarding bleaching procedure and products. The questions were given below. In this study the percentage of awareness has to be noted based on their knowledge and the statistical analysis was performed to analyze the study

1. Which age group do you belong to  
A)18-24  
B)25-30  
C)31-40  
D)41-60
2. Mention your educational qualification  
A)Secondary education (School)  
B)Bachelor Degree  
C)Master Degree  
D)Diploma
3. Have you heard about tooth bleaching?  
A)Yes  
B)No  
C)Not Sure
4. How did you know about tooth bleaching?  
A)Yes, Mention \_\_\_\_\_  
B)No  
C)Not Sure
5. Do you know about the cause for your tooth discolouration ?  
A)Yes, Mention \_\_\_\_\_  
B)No  
C)Not Sure
6. Have you heard about bleaching products?  
A)Yes  
B)No  
C)Not Sure
7. Have you ever tried using bleaching products ?  
A)Yes  
B)No  
C)Not Sure
8. Do you Prefer to undergo professional tooth bleaching treatment?  
A)Yes, Mention \_\_\_\_\_  
B)No, Mention \_\_\_\_\_  
C)Not Sure
9. Do you know what are the differences between cleaning and bleaching treatment?  
A)Yes  
B)No  
C)Not Sure
10. Do you know how often professional help is needed for the bleaching treatment?  
A)Yes  
B)No  
C)Not Sure
11. Do you think the bleaching products/ treatment are safe?  
A)Yes  
B)No  
C)Not Sure
12. Do you intend to use any bleaching products/ treatment in the future?  
A)Yes  
B)No  
C)Not Sure
13. Do you know about the prices of these teeth bleaching treatment options?  
A)Yes  
B)No  
C)Not Sure
14. Would you recommend to your friends and family to use these bleaching products / treatment?  
A)Yes  
B)No  
C)Not Sure
15. Do you know how long the bleaching treatment effect will last  
A)Yes  
B)No  
C)Not Sure

**RESULT:**

This questionnaire based study was proposed to 100 out of which only 85 agreed to participate. The participants were are to respond to a set of 15 questions to determine their knowledge about bleaching products and treatment procedure in dentistry. The data obtained from the questionnaire is depicted as follows for each question.

## Question 1.

Which age group do you belong to

- A) 18-24
- B) 25-30
- C) 31-40
- D) 41-60

Age Group	Percentage Of Responses
18-24	13
25-30	14
31-40	53
41-60	20

The respondents belonged to four age groups, of which maximum number of participants belonged to the age group from 31-40 years.

## Question2.

Mention your educational qualification

- A) Secondary education (School)
- B) Bachelor Degree
- C) Master Degree
- D) Diploma

Educational Qualification	Percentage Of Responses
Secondary education (School)	45
Bachelor Degree	14
Master Degree	5
Diploma	-

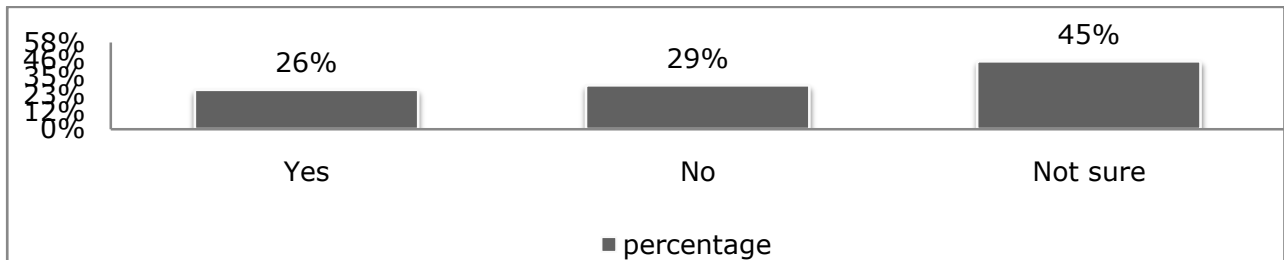
## Question3

Have you heard about tooth bleaching?

- A) Yes
- B) No
- C) Not Sure

Tabel-1

Responses	Number out of 85 participants
Yes	22
No	25
Not sure	38



Among 85 participants only 22(26%) responded that they heard about tooth bleaching and the main source of information came from advertisements on television and by friends and doctors and 25(29%) of participants said they had not heard about bleaching.38(45%) of 85 participants reported that they are not sure .(Tabel-1)

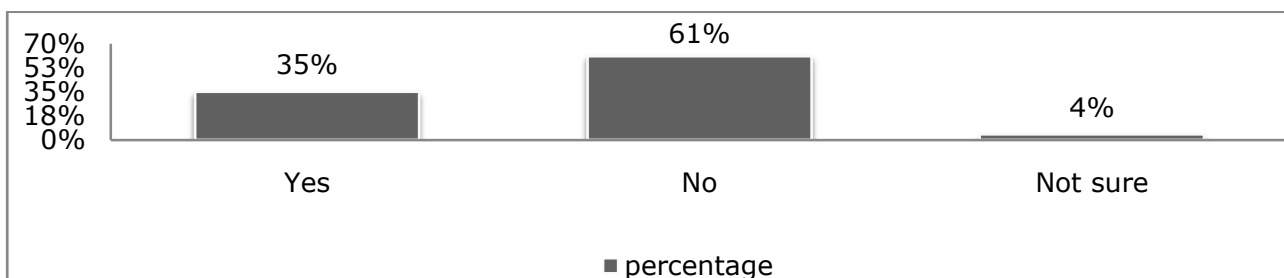
## Question4.

How did you know about tooth bleaching?

- A) Yes , Mention\_\_\_\_\_
- B) No
- C) Not Sure

Tabel-2

Responses	Number out of 85 participants
Yes	30
No	52
Not sure	3



30 (35%)participants among 85, answered that they heard about tooth bleaching by source of information came from advertisements on television and by friends and doctors and 52(61%) of participants reported that they don't know ,while 3(4%) of 85 participants said they are not sure.(Tabel-2)

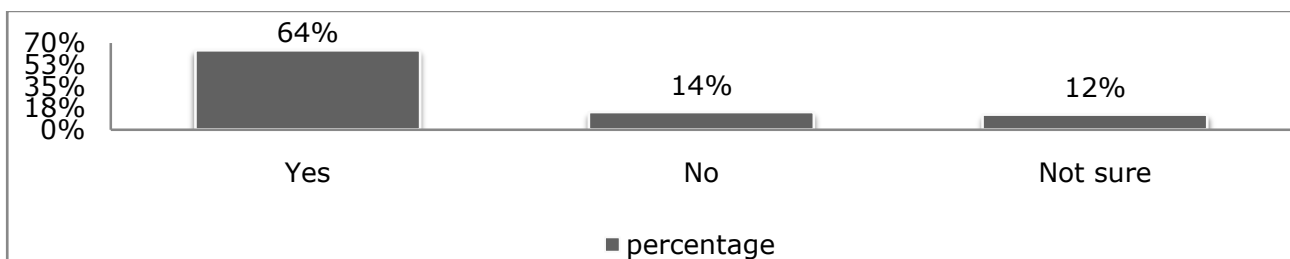
Question5.

Do you know about the cause for your tooth discolouration ?

- A) Yes, Mention \_\_\_\_\_  
 B) No  
 C) Not Sure

Tabel-3

Responses	Number Out Of 85 Participants
Yes	63
No	12
Not Sure	10



63(63%) participants among 85 were able to know the cause for tooth discolouration and specified it was cigarette, pipe and chewing tobacco followed by coffee, tea and poor oral hygiene. 12(14%) participants said they didn't know the cause. And 10(12%) among 85 participants said they are not sure about the cause for discolouration. (Table -3)

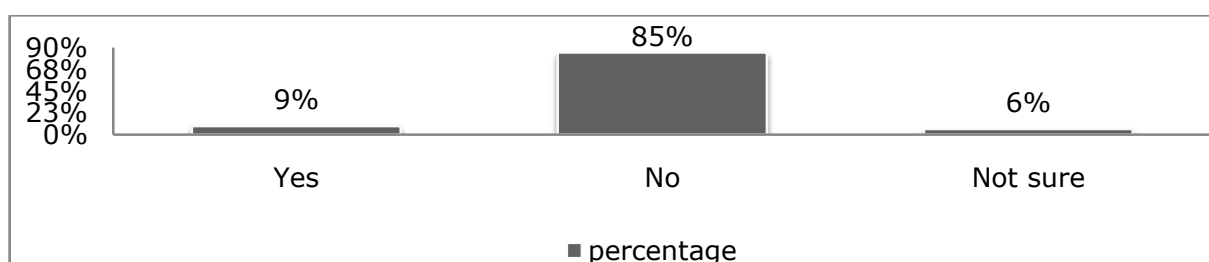
Question6.

Have you heard about bleaching products?

- A) Yes  
 B) No  
 C) Not Sure

Tabel-4

Responses	Number out of 85 participants
Yes	8
No	72
Not sure	5



8(9%) participants among 85 participants answered that they heard about the bleaching products, 5 patients specified it was hydrogen peroxide followed by bleaching pen and 72(85%) said they don't know and 5(6%) among 85 participants reported that they are not sure about the bleaching products used in dentistry. (Table-4)

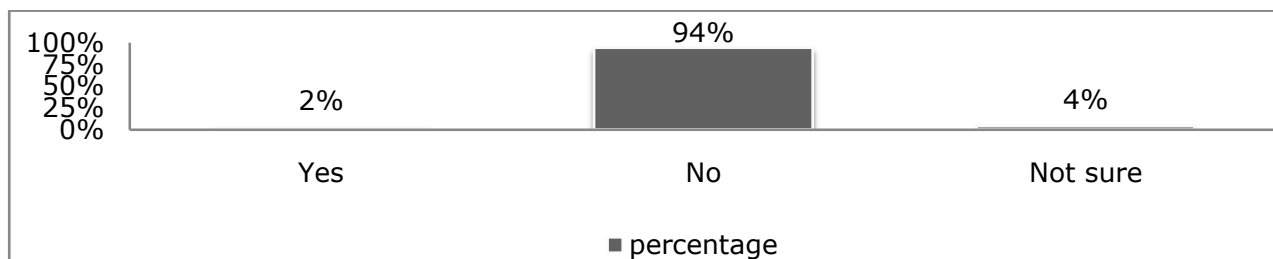
Question 7.

Have you ever tried using bleaching products ?

- A) Yes
- B) No
- C) Not Sure

Tabel-5

Responses	Number Out Of 85 Participants
Yes	2
No	80
Not Sure	3



Out of 85 participants, 2(2%) participants reported they tried using bleaching products. The rest 80(94%) participants said they had not tried using it and 3(4%) participants out of 85 were not able to answer (Table-5)

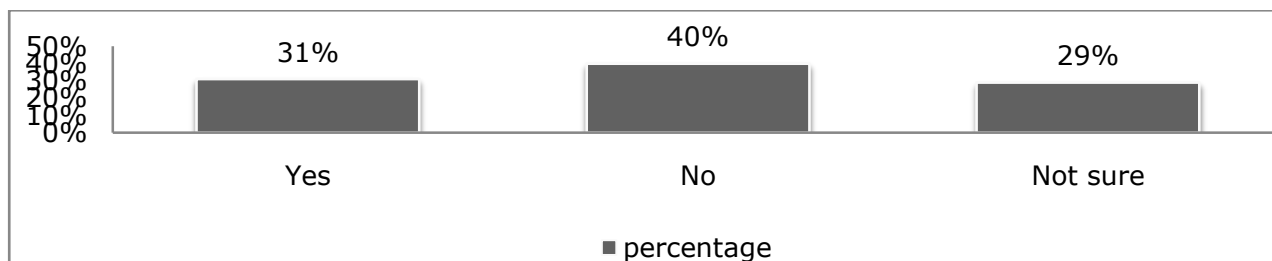
Question 8.

Do you Prefer to undergo professional tooth bleaching treatment?

- A) Yes, Mention \_\_\_\_\_
- B) No, Mention \_\_\_\_\_
- C) Not Sure

Tabel-6

Responses	Number Out Of 85 Participants
Yes	26
No	34
Not Sure	25



26(31%) participants among 85 responded that they will undergo professional bleaching treatment, 34(40%) was not willing and 25(29%) among 85 was not sure. The reason behind their reluctance for treatment is that they reported that it might be temporary and not permanent. (Tabel-6)

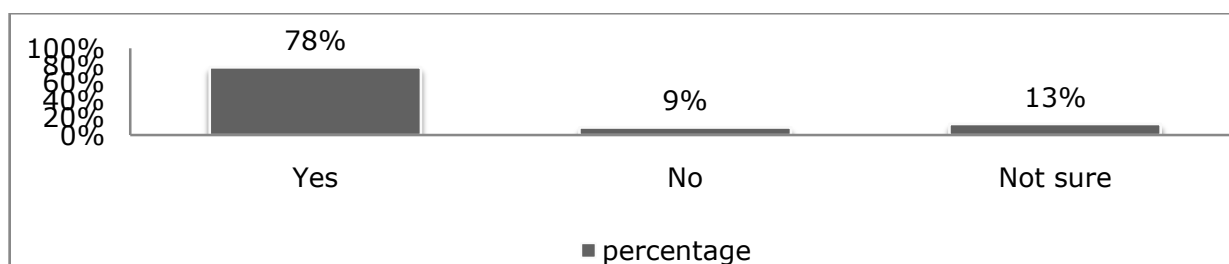
Question 9.

Do you know what are the differences between cleaning and bleaching treatment?

- A) Yes
- B) No
- C) Not Sure

Tabel-7

Responses	Number Out Of 85 Participants
Yes	66
No	8
Not Sure	11



Among 85 participants 68(78%) were able to differentiate between tooth cleaning and bleaching. 8(9%) responded that cleaning and bleaching were not different and 11(13%) among 85 responded that they are not sure. This misconception is due to the fact that patients tend to confuse between tooth cleaning (scaling) and bleaching, as the former removes calculus causing clearer tooth and later whitens the teeth which are discoloured. (Tabel-7)



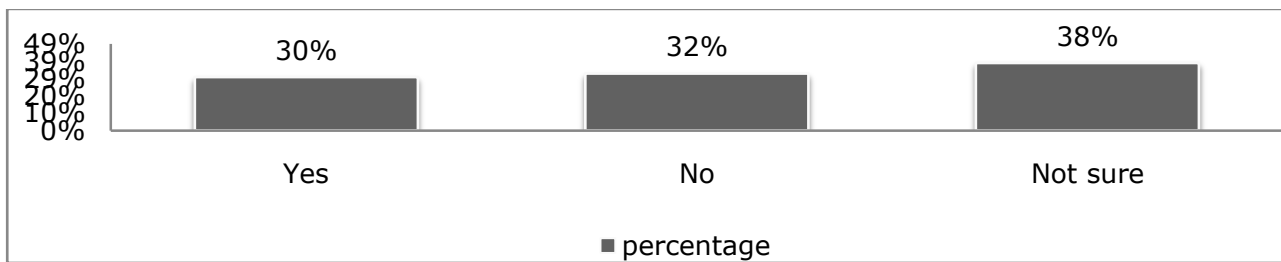
## Question10.

Do you know how often professional help is needed for the bleaching treatment?

- A) Yes
- B) No
- C) Not Sure

Tabel-8

Responses	Number Out Of 85 Participants
Yes	25
No	27
Not Sure	32



25( 30% )participants among 85 reported that seeking a professional for bleaching treatment is necessary, 32(38%) responded that brushing and commercial bleaching products are suffice and 32(32%) participants comprising 85 were not sure.This is because of the availability of certain commercial bleaching products available ,they think that professional help is not often necessary.(Tabel-8)

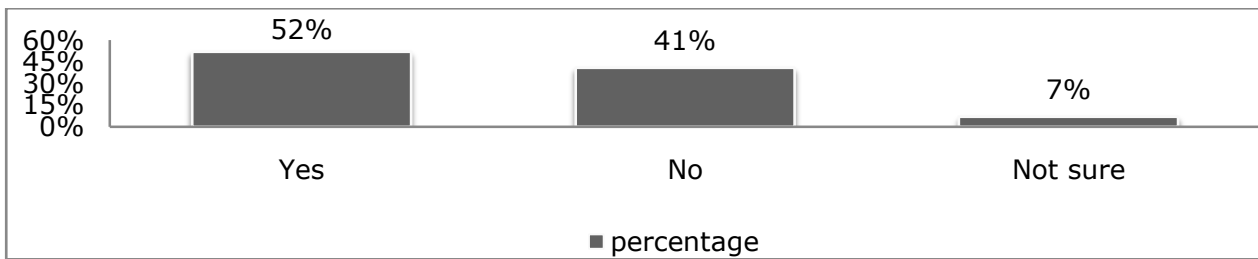
## Question11.

Do you think the bleaching products/ treatment are safe?

- A) Yes
- B) No
- C) Not Sure

Tabel-9

Responses	Number Out Of 85 Participants
Yes	44
No	35
Not Sure	6



Among 85 participants 44( 52%) responded that the bleaching products are safe, 35(41%) said that they are not safe and 6(7%)among 85 reported as not sure about the safety of bleaching products.(Tabel-9)

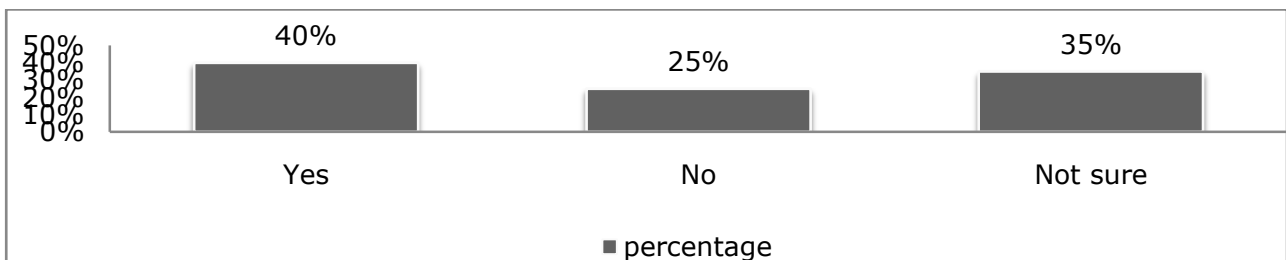
#### Question12.

Do you intend to use any bleaching products/ treatment in the future?

- A) Yes
- B) No
- C) Not Sure

Tabel-10

Responses	Number Out Of 85 Participants
Yes	34
No	21
Not Sure	30



Among 85 participants 34(40%) reported that they are interested to try bleaching treatment in the future, majority of them preferred in-office treatment by the dentist compared to self-application using over-the-counter or commercially available products, 21(25%) participants comprising of 85 said they are not willing to undergo treatment and 30(35%) participants among 85 reported that they are not sure if they were to undergo treatment.(Tabel-10)

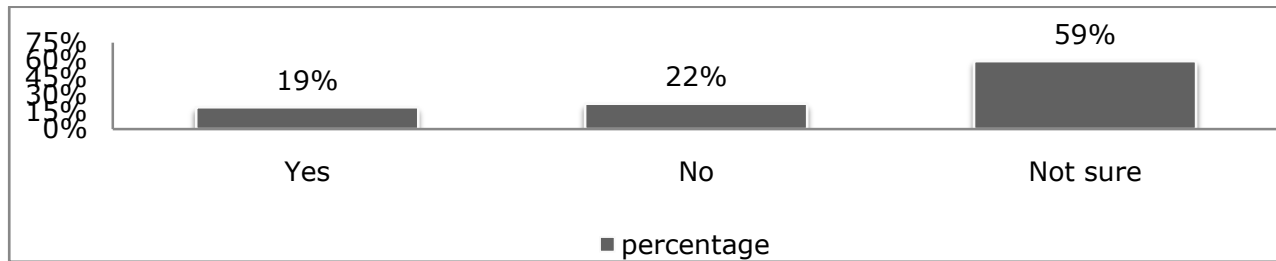
Question13.

Do you know about the prices of these teeth bleaching treatment options?

- A) Yes
- B) No
- C) Not Sure

Tabel-11

Responses	Number Out Of 85 Participants
Yes	16
No	19
Not Sure	50



Out of 85 participants 16(19%) reported that they know the prices for bleaching treatment,while 19(22%) among 85 respondents said they don't know and 50(59%) participants among 85 % were not sure about the price of bleaching treatment.(Tabel-11)

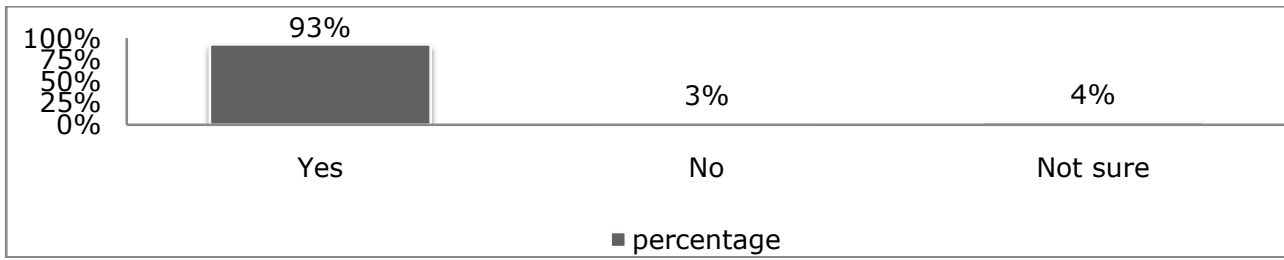
Question14.

Would you recommend to your friends and family to use these bleaching products / treatment?

- A) Yes
- B) No
- C) Not Sure

Tabel-12

Responses	Number Out Of 85 Participants
Yes	80
No	2
Not Sure	3



Among 85 participants 80(93%) reported that they will recommend to use bleaching products to family and friends ,2(3%) said they won't recommend and 3(4%) among 85 participants reported they are not sure whether they will recommend.(Table-12)

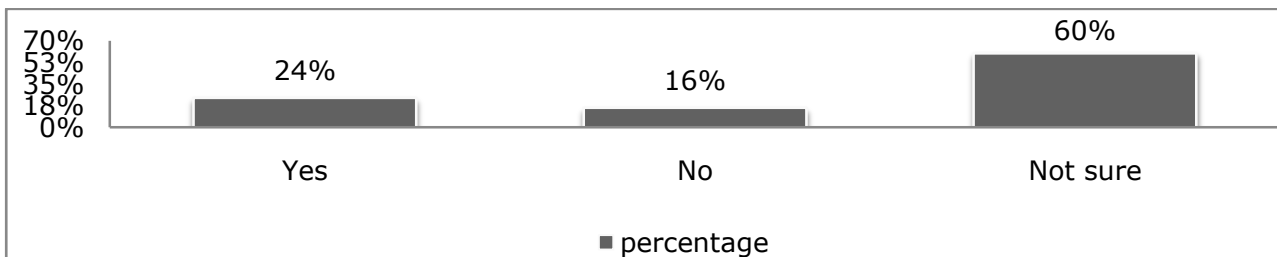
Question15.

Do you know how long the bleaching treatment effect will last

- A) Yes
- B) No
- C) Not Sure

Tabel-13

Responses	Number Out Of 85 Participants
Yes	20
No	14
Not Sure	51



Among 85 participants,20(24%) reported that they know how long the bleaching treatment will be effective ,while 14(16%) reported that they don't know how long it will be effective and 51(60%) participants among 85 reported they are not sure about the it.(Tabel-13)

**DISCUSSION:**

The study was conducted based on a self prepared questionnaire circulated among 100 patients of Saveetha dental college, Chennai. Out of the 100 contacted for the study only 85 agreed to respond. The participants included both males and females. They belong to 18-60 yrs of age group. There are 15 direct questions with four options. There are no negative marks for wrong responses. The data obtained was categorized into positive and negative responses individually for all 15 questions and the resulting correct responses were considered to determine the knowledge among patients. The socio-demographic factors like age and gender did not influence the participants' knowledge on bleaching. However, the level of education had a significant influence, those with higher education knew better than those without. There was a maximum 63% participants belonged to the age group of 31-40 years. Based on the responses to the questionnaire, it can be seen that the participants who had prior knowledge about bleaching got to know about in through media, friends, family and dentists, but majority were not sure or didn't know what actually the bleaching procedure is. Maximum participants 64% knew what causes tooth discolouration and only a smaller group were aware of the commercially available bleaching products and actually tried using. The responses to the queries relating to their preference to professional help and about intervals needed between professional treatment had almost even responses but favouring their lack of preference to undergo professional bleaching treatment and use commercially available products. Majority of the participants 78% were able to identify the causes of tooth discolouration. When asked about their confidence in availing bleaching treatment and using bleaching products in future, majority of participants responded positively, but almost everyone had doubts regarding the prices of these treatment method and products. Maximum participants 93% responded that they would suggest bleaching to the friends and families but the doubt in the longevity and effectiveness of bleaching still prevails in majority of the participants.

Fig.1

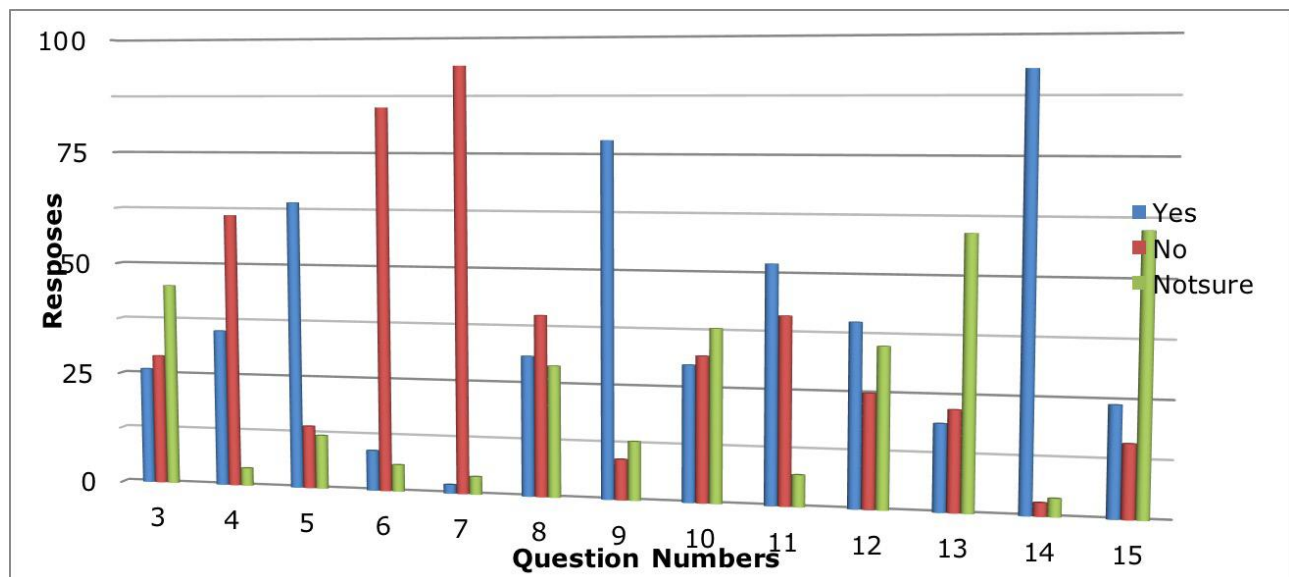
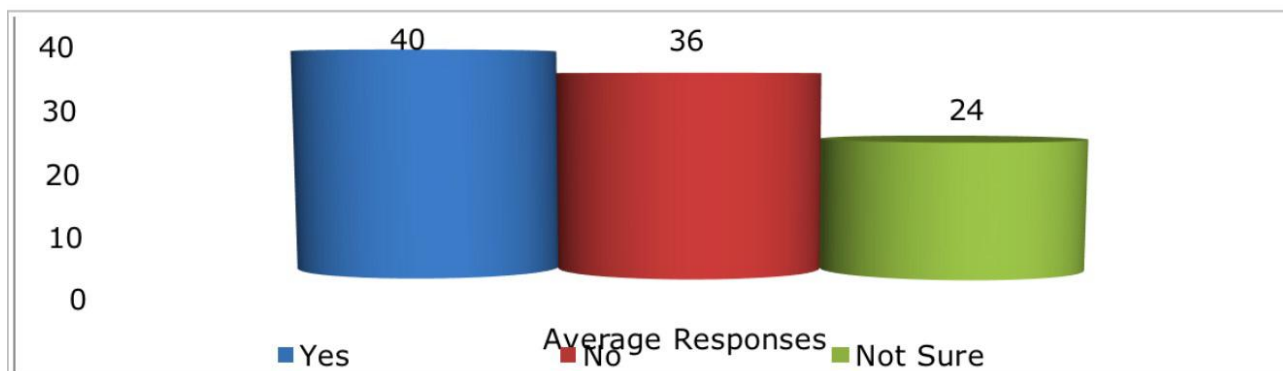


Fig.2



## CONCLUSION:

Based on the questionnaire, among the 85 participants; nearly 40% of responses were positive which clearly shows the existing knowledge and willingness towards dental bleaching. But there still exists certain doubts and misconceptions regarding the fidelity, prices and longevity of bleaching procedure and products which can be cleared through proper awareness and education to the patients visiting a dental set up.(Fig.2)

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- 1.A.Watts, M. Addy. Tooth discolorations and staining: a review of the literature. *British Dental Journal*.2001;190:309-316.
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