

Perception of Smile Esthetics among General Population - An Electronic survey study

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Abstract

Objective: To assess the Perception of Smile Esthetics among General population using a question are study.

Materials and Methods: Perception of smile esthetics was done on 211 subjects aged between 15-48 years which included 107 males and 104 females randomly from Desh Bhagat university, Punjab. The people in this survey were given a set of 20 questions which were answered after a look through reading. Each individual was evaluated on the basis of their choice and opinion regarding smile. Descriptive statistics was used to find the mean and standard deviation of age and frequencies of other independent variables and questions. Chi-square test was used to find the association between the independent variables and questions.

Results: Chi-square test revealed an association between age groups and certain questions included in the questionnaire, as for Appearance (2), Embarrassed (9) Lip colour (18).The association was found to be statistically significant .Similarly, an association was found between gender and questions, as Seeing(3),What about smile(4), What if your gums (7),If lips do not close (8), Embarrassed to visit (9), Smile in life partner(10),Habits(12),Does your smile make you introverted(13),Affected a personal relationship(14),Your lips size(16), Appearance during smiling(17), Root surface is visible and want them corrected(20)and the results were statistically significant($p < 0.05$).

Conclusions: Disparity of perception among individuals of different age and sex will always prevail, hence an overall assessment of smile esthetics of the general population should be kept in mind. An equal importance needs to be given to the patient's desire within the boundaries of orthodontics for the sake of efficient and appreciable esthetic outcome.

Keywords: Orthodontics, Smile perception

Introduction

An aesthetic smile has a number of components, and people generally equate a good dental appearance with success in many areas of life. General population seeks out orthodontic services to enhance their smile orthodontically. People's perception of a perfect smile esthetics has been seen to vary from one individual to another. Facial attractiveness and smile attractiveness appear to be strongly connected to each other, since attention is mainly directed toward the mouth and eyes of the speaker's face in social interactions. The purpose of this study was to evaluate how smile characteristics are perceived by General population.

Materials and methods

Ethics

An electronic survey was conducted and Perception of smile esthetics was done on 211 subjects aged between 15-48 years which included 107 males and 104 females randomly from Desh Bhagat university, Punjab.

Study Design

The people in this survey were given a set of 20 questions which were answered after a look through reading. Each individual was evaluated on the basis of their choice and opinion regarding smile.

Based upon the answers chosen by the population, a statistical analysis was done and conclusions were made on the grounds of what reasons were suited to be fit for a good treatment outcome which was mostly desired by a particular set of individuals in a population.

Inclusion criteria

The survey included subjects:

Aged between 15-48 years.

All males and females from Desh Bhagat university.

Exclusion criteria

People below the age of 15 years were excluded

Sample size

Sample size calculation was done based on erstwhile data procured from a former study which to analyzed the expectancy of a general population from an orthodontic point of view and arriving at a conclusion of how attainment of a virtuous treatment planning could deliver a satisfactory result (Trivedi *et al.*, 2020). For an α value equal to 0.05 and $Z_{1-\alpha/2} = 1.96$, The total sample size was estimated to be 207.

Formula:
$$n = \frac{\left(Z_{1-\frac{\alpha}{2}}\right)^2 (pq)}{d^2}$$

$$p = 0.65$$

$q = 0.35$
 $d = 10$
 $\alpha = 5\%$
 $Z_{1-\alpha/2} = 1.96$

Sample Size = 207

Sampling technique

Simple random sampling technique is used

Questions Responses 211 Settings

survey on the Perception of Smile Esthetics

Form description

General Information

Description (optional)

Name: *

Short answer text

Age: *

Short answer text

Sex: *

- Male
- Female

Occupation: *

- Employed
- Un-Employed
- Student

Would you like to participate in this survey? *

- Yes
- No

Contact Number: *

Short answer text

E-mail Id *

Short answer text

⋮

1. Rate your smile on a scale of 1-4, with 4th being perfect. *

- A. Poor
- B. Average
- C. Acceptable
- D. Perfect

2. Are you unhappy with the appearance of your teeth and smile? *

- A. yes
- B. No
- C. may be
- D. May not be

3. When you see yourself in a picture how would you describe yourself. *

- A. I rarely smile
- B. I smile a lot although I don't have a perfect smile
- C. My smile affects my self confidence in a negative way.
- D. My smile does not bother me at all.

4. Does it bother you what people may be thinking about your smile? *

- A. Yes, it always bother me.
- B. Yes, it may bother if the opinion is negative.
- C. I rarely bother.
- D. No, I don't bother at all.

5. How do you think having a perfect smile would improve your life? *

- A. I would feel better about myself.
- B. I would smile more often.
- C. I would have more confidence with friends, family as well as at my work place.
- D. I don't think having a perfect smile improves our daily lives in any way.

6. What would you most like to improve about your smile? *

- A. It should look whither and brighter.
- B. Should get rid of the gaps.
- C. Should get rid of the irregularities (straightening of teeth).
- D. I don't want to have any changes in my smile.

7. Would you like if your gums are visible while smiling or having a conversation. *

- A. Yes, I would like if it is visible.
- B. Yes, it should be partially visible.
- C. No, it should not be visible at all.
- D. Visibility of the gums does not bother me at all.

8. will you accept, if your lips do not close while they are at rest position. *

- A. Yes, it is acceptable by me
- B. No, not acceptable at all.
- C. Not acceptable but I feel I can manage
- D. I don't care if it is acceptable or not.

9. Are you embarrassed to visit the dentist because of what they may see in your mouth? *

- A. yes,its embrassing to me.
- B.No,not embrassing at all
- C.not embrassing but I feel I can can visit a dentist.
- D. I dont want to go.

10. What kind of smile would you aspire to have in your life partner? *

- A. Smile does not matter to me.
- B. A perfect smile
- C. With slight visibility of gums
- D. Smile with no show of teeth

11. Are you inhibited from showing a full smile in front of others, especially strangers? *

- A. YES I feel inhibited.
- B. SOMETIMES I feel in front of strangers
- C. no, not at all
- D. i don't care about it.

12.. Have you developed any habits to mask your smile? *

- A. yes I mask when I smile
- B. NO I don't mask my smile
- C. sometimes.
- D. I don't care about it

13. Does your smile make you introverted? *

- A. yes
- B. No
- C. Maybe
- D. No, not at all

14. Do you think of an instance where concern for your smile has affected a personal relationship? *

- A. yes it affects the personal relationship
- B. No,it wont affect the personal relationship
- C. Maybe it will affect the relationship
- D. No,Not at all.

15. Do you feel your front teeth are crowded,missing,forwarded much" (buck teeth)? *

- A. Yes
- B.No
- C. Sometimes it feels
- D. No,not at all

16.Do you think your lips are bigger or smaller in size *

- A.yes I have bigger lips
- B .I think My lips are normal
- C.Yes I have Smaller lips
- D.I don't know

17.Have you found that other people have teased you about the appearance of your teeth during smiling *

- A.yes
- B.No
- C.sometimes
- D.No,not at all.

18. Are u satisfied with your lip color *

- A.yes
- B No
- C prefer not to say
- D never gave any attention

19. When reading magazines and looking at models with beautiful smiles, have you found yourself fantasizing about having their smile? *

- A.yes
- B.No
- C.sometimes
- D.Never gave any attention

20. Have your gums receded so that the root surface is visible and you want them corrected *

- A.Yes
- B.No
- C.should get rid of it
- D.Does not bother me at all

Statistical Analysis

The responses from the question are were collected and data was subjected to statistical analysis. Chi square test was performed, all the asked questions were found to be significant with a $p < 0.05$ value. Descriptive statistics was used to find the mean and standard deviation of age and frequencies of other independent variables and questions. Chi-square test was used to find the association between the independent variables and questions.

Table 1: Association between age and different questions that are statistically significant

| Age | Ques 2 | Ques 9 | Ques 18 |
|------------------|--------|--------|---------|
| Chi-square value | 24.85 | 20.835 | 27.612 |
| p-value | 0.003* | 0.013* | 0.001* |

*p<0.05

Table 2: Association between sex and different questions that are statistically significant

| Sex | Ques 3 | Ques 4 | Ques 7 | Ques 8 | Ques 9 | Ques 12 | Ques 13 | Ques 14 | Ques 16 | Ques 17 | Ques 20 |
|------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| Chi-square value | 14.17 | 16.042 | 17.908 | 16.370 | 14.176 | 11.206 | 18.607 | 10.814 | 14.611 | 13.987 | 11.271 |
| p-value | 0.003* | 0.001* | 0.000* | 0.001* | 0.003* | 0.011* | 0.000 | 0.013* | 0.002* | 0.003* | 0.010* |

*p<0.05

1. Descriptive statistics for individual questions

Table 3: frequencies of different replies for each question.

| Questions | Number of replies | Percentage of replies |
|--|-------------------|-----------------------|
| Question 1 - Rate your smile on a scale of 1-4, with 4th being perfect. | | |
| Poor | 2 | 0.9 |
| Average | 52 | 24.6 |
| Acceptable | 81 | 38.4 |
| Perfect | 76 | 36.0 |
| Question 2- are you unhappy with the appearance of your teeth and smile | | |
| Yes | 45 | 21.3 |
| No | 125 | 59.3 |
| Maybe | 41 | 19.4 |
| Question 3- When you see yourself in a picture how would you describe yourself | | |
| Rarely smile | 47 | 22.3 |
| I smile a lot even if I don't have a perfect smile | 64 | 30.3 |
| My smile affects my self-confidence in a negative way | 17 | 8.1 |
| My smile does not bother me at all | 83 | 39.3 |
| Question 4- Does it bother you what people may be thinking about your smile? | | |
| Yes, it always bothers me | 24 | 11.4 |
| Yes, it bothers me sometimes | 34 | 16.1 |
| I rarely bother | 36 | 17.1 |

| | | |
|--|-----|------|
| No, I don't bother at all | 117 | 55.5 |
| Question 5- How do you think having a perfect smile would improve your life? | | |
| I would feel better about myself | 75 | 35.5 |
| I would smile more often | 42 | 19.9 |
| I would have more confidence with friends, family and in my workplace | 57 | 27.0 |
| I dont think having a perfect smile improves our daily lives in any way. | 37 | 17.5 |
| Question 6- What would you most like to improve about your smile? | | |
| Question 6- What would you most like to improve about your smile? | | |
| Should look whiter and brighter | 73 | 34.6 |
| Should get rid of gaps | 15 | 7.1 |
| Should get rid of irregularities | 40 | 19.0 |
| I dont want to have any changes in my smile | 83 | 39.3 |
| Question 7- Would you like if your gums are visible while smiling or having a conversation. | | |
| Yes, I would like it if it is visible | 34 | 16.1 |
| Yes, it should be partially visible | 46 | 21.8 |
| No, it should not be visible at all | 90 | 42.7 |
| Visibility of the gums does not bother me at all | 41 | 19.4 |
| Question 8- Will you accept, if your lips do not close while they are at rest position | | |
| Yes, it is acceptable by me | 37 | 17.5 |
| No, not acceptable at all | 105 | 49.8 |
| Not acceptable but i feel I can manage | 38 | 18.0 |
| I don't care if it is acceptable or not | 31 | 14.7 |
| Question 9- Are you embarrassed to visit the dentist because of what they may see in your mouth? | | |
| Yes, it is embarrassing to me | 27 | 12.8 |
| No, not embarrassing at all | 133 | 63.0 |
| Not embarrassing but I feel I can visit a dentist | 38 | 18.0 |
| I don't want to go | 13 | 6.2 |
| Question 10- What kind of smile would you aspire to have in your life partner? | | |
| Smile does not matter to me | 50 | 23.7 |
| A perfect smile | 136 | 64.5 |
| With slight visibility of gums | 16 | 7.6 |
| Smile with no show of teeth | 9 | 4.3 |
| Question 11- Are you inhibited from showing a full smile in front of others, especially strangers? | | |
| Yes, I feel inhibited | 35 | 16.6 |

| | | |
|---|-----|------|
| Sometimes | 55 | 26.1 |
| No, not at all | 71 | 33.6 |
| I don't care about it | 50 | 23.7 |
| Question 12- Have you developed any habits to mask your smile? | | |
| Yes, I mask when I smile | 24 | 11.4 |
| No, I don't mask my smile | 88 | 41.7 |
| Sometimes I mask my smile | 65 | 30.8 |
| I don't care about it | 34 | 16.1 |
| Question 13- Does your smile make you introverted? | | |
| Yes | 22 | 10.4 |
| No | 111 | 52.6 |
| maybe | 39 | 18.5 |
| No, Not at all | 39 | 18.5 |
| Question 14- Do you think of an instance where concern for your smile has affected a personal relationship? | | |
| Yes, it affects the personal relationship | 26 | 12.3 |
| No, it didn't affect my personal relationship | 63 | 29.9 |
| Maybe it will affect my relationship | 35 | 16.6 |
| No, not at all | 87 | 41.2 |
| Question 15- Do you feel your front teeth are crowded, missing, for waded much" (buck teeth)? | | |
| Yes | 41 | 19.4 |
| No | 113 | 53.6 |
| Sometimes it feels | 26 | 12.3 |
| No, not at all | 31 | 14.7 |
| Question 16- Do you think your lips are bigger or smaller in size | | |
| yes, i have bigger lips | 21 | 10.0 |
| I think my lips are normal | 138 | 65.4 |
| Yes, I have smaller lips | 23 | 10.9 |
| I don't know | 29 | 13.7 |
| Question 17- Have you found that other people have teased you about the appearance of your teeth during smiling | | |
| Yes | 29 | 13.7 |
| No | 107 | 50.7 |
| Sometimes | 37 | 17.5 |
| No, not at all | 38 | 18.0 |
| Question 18- Are you satisfied with your lip colour? | | |

| | | |
|---|-----|------|
| Yes | 153 | 72.5 |
| No | 31 | 14.7 |
| Prefer not to say | 11 | 5.2 |
| Never gave any attention | 16 | 7.6 |
| Question 19-When reading magazines and looking at models with beautiful smiles, have you found yourself fantasizing about having their smile? | | |
| Yes | 59 | 28.0 |
| No | 58 | 27.5 |
| Sometimes | 60 | 28.4 |
| Never gave any attention | 34 | 16.1 |
| Question 20- Have your gums receded so that the root surface is visible and you want them corrected | | |
| Yes | 39 | 18.5 |
| No | 133 | 63.0 |
| Should get rid of it | 11 | 5.2 |
| Does not bother me at all | 28 | 13.3 |

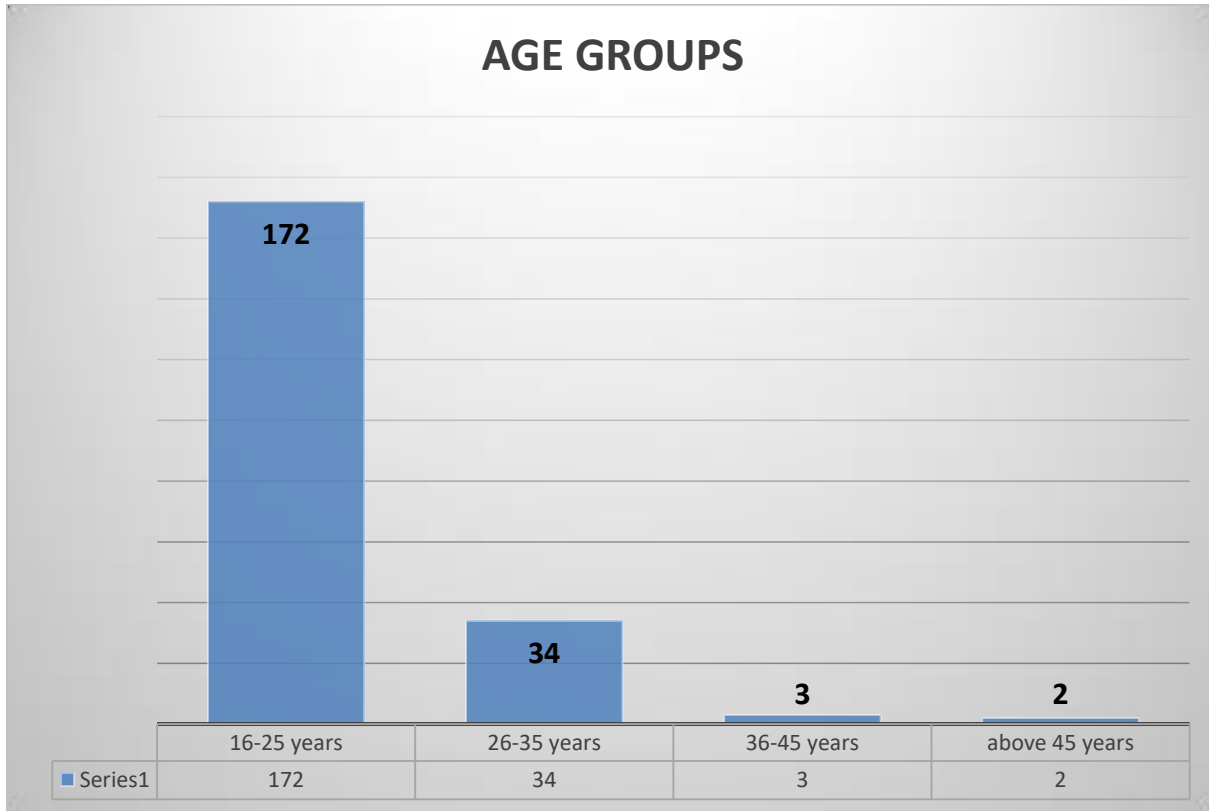
2. Frequencies

A) Age

- The mean age is 22.69 years
- Standard deviation of age is 4.649 years.
- Age-range= 15 to 48 years.

| Age code | | | | | |
|----------|----------------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 16-25 years | 172 | 81.5 | 81.5 | 81.5 |
| | 26-35 years | 34 | 16.1 | 16.1 | 97.6 |
| | 36-45 years | 3 | 1.4 | 1.4 | 99.1 |
| | above 45 years | 2 | .9 | .9 | 100.0 |
| | Total | 211 | 100.0 | 100.0 | |

Graph 1:

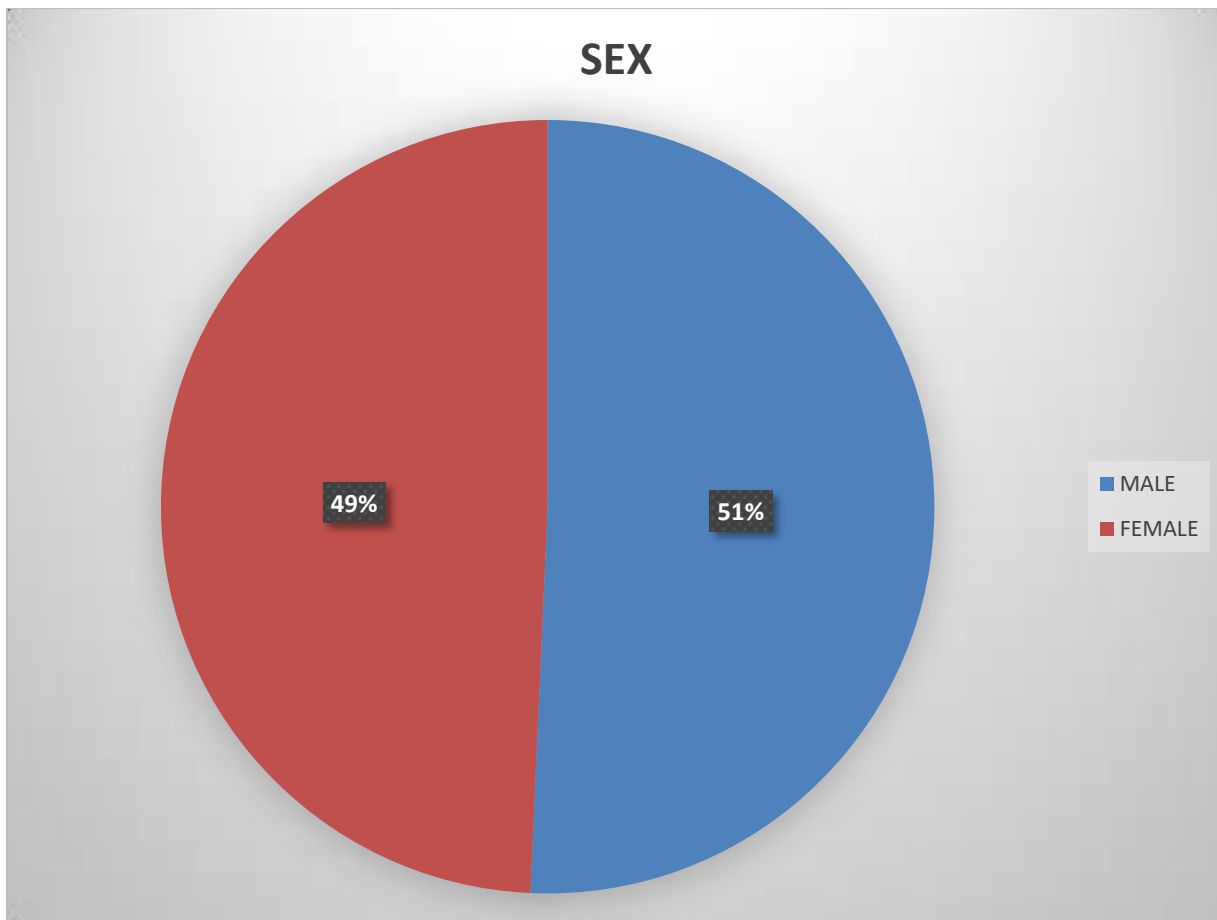


According to Graph 1 it is found that out of 211 subjects 172 were aged between 16-25 years, 34 were aged between 26-35 years, 3 were aged between 36-45 years & 2 were aged above 45 years.

B) Sex Code

- Number of males= 107
- Number of females= 104

| Sex Code | | | | | |
|----------|--------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 107 | 50.7 | 50.7 | 50.7 |
| | Female | 104 | 49.3 | 49.3 | 100.0 |
| | Total | 211 | 100.0 | 100.0 | |



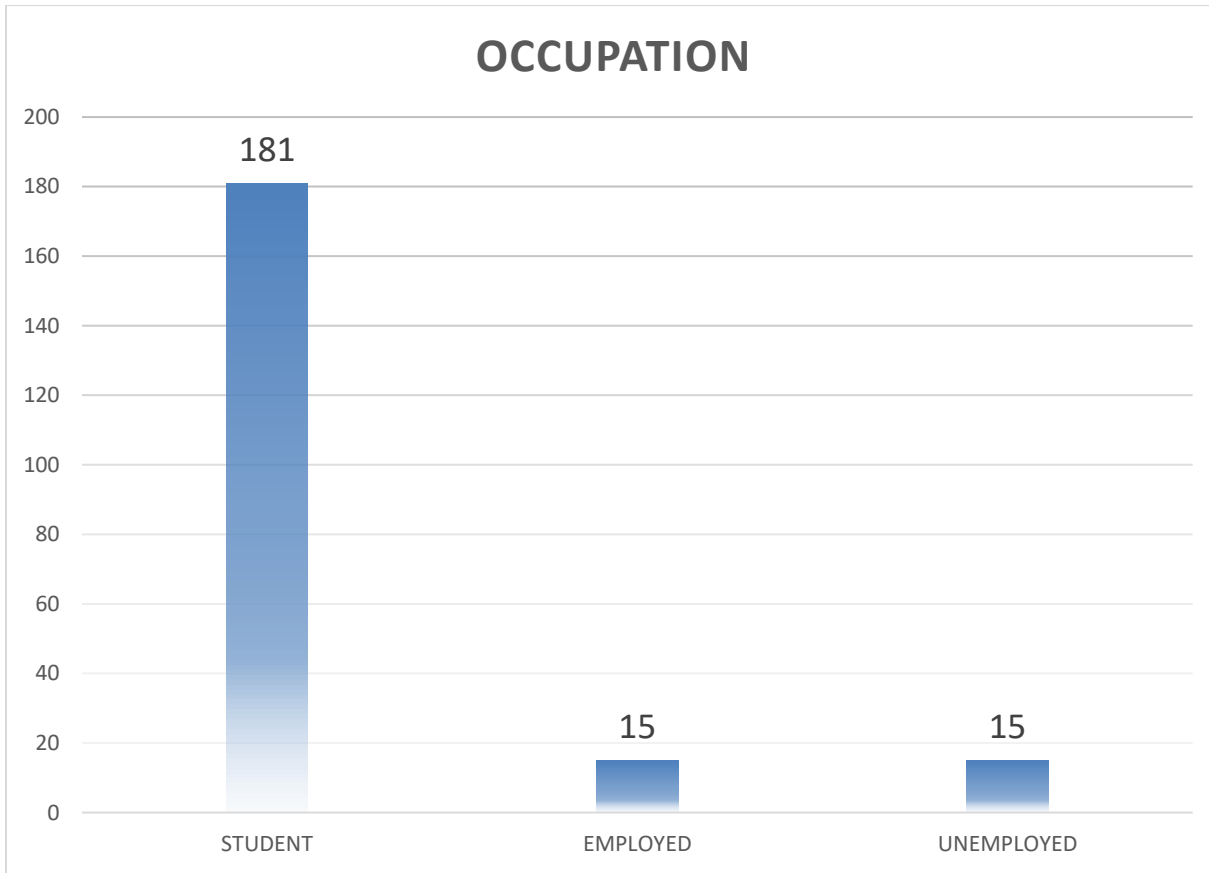
Graph 2: frequency of sex distribution

According to Graph, It depicts 51% were males and 49% were females

C) Occupation Code

- Number of students= 181
- Number of employed people= 15
- Number of unemployed people= 15

| | | Occupation Code | | | |
|-------|------------|-----------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Student | 181 | 85.8 | 85.8 | 85.8 |
| | Employed | 15 | 7.1 | 7.1 | 92.9 |
| | Unemployed | 15 | 7.1 | 7.1 | 100.0 |
| | Total | 211 | 100.0 | 100.0 | |



Graph 3: frequency of distribution of various occupation

According to Graph 3 it is found that out of 211 subjects 181 were students, 15 were employed and 15 were unemployed.

Results

Chi square test was performed, all the asked questions were found to be significant with a $p < 0.05$ value from table 3, The descriptive statistics are:

- Ques (1) implies 38.4%.
- Ques (2) implies 59.3%.
- Ques (3) implies 39.3%
- Ques (4) implies 55.5%.
- Ques (5) implies 35.5%.
- Ques (6) implies 39.3%.
- Ques (7) implies 42.7%.
- Ques (8) implies 49.8%.
- Ques (9) implies 63.0%.
- Ques (10) implies 64.5%.

- Ques (11) implies 33.6%.
- Ques (12) implies 41.7%.
- Ques (13) implies 52.6%.
- Ques (14) implies 41.2%.
- Ques (15) implies 53.6%.
- Ques (16) implies 65.4%.
- Ques (17) implies 50.7%.
- Ques (18) implies 72.5%.
- Ques (19) implies 28.4%.
- Ques (20) implies 63.0%.

Discussion

It is believed that attractive people are more likely to be very confident. and in fact, younger generations are attaching increasing importance to all aspects of their appearance and the role of an attractive smile is undeniable. Moreover, we got

to know that it is more critical when judging smile aesthetics various groups of patients have differences in perceiving esthetics which mainly depends upon age, sex, patient's education, variation in attitude in the appearance of their teeth. Hence as far as perception of people in the patient's vicinity is concerned, it may give a biased opinion when it comes to the area and age differences. According to this study The frequency of population when asked about their level of bothering of others views regarding their smile, they came up with the outcome 55% that they don't bother at all of what other people may be thinking of their smiles.

People in the frequency of 36% felt they had a perfect smile despite the fact the they still feel the need to take up an orthodontic treatment in order to make their smile perfect.

Conclusion

Perception of the population regarding the negativity about the unpleasantness of their smiles can only be dealt by not imposing orthodontist's view point instead accepting their own desire of change in relation to the standard of smile esthetics. As we know that Disparity of perception among individuals of different age and sex will always prevail so we should go according the patient wishes and motivate them for correcting their precious smile.

Visibility of gums and competency of lips are very delicate issues to handle as it may lead to different treatment protocols from extractions to surgical procedures hence the flaws of such appearances are to be explained by an orthodontist within orthodontic principles and keeping in mind the wishes of a patient.

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