

Assessment of Knowledge and Attitude about Principles and Practices of Orthodontic Treatment among Dentists and Non-Orthodontic Specialists in Karnataka: A Questionnaire Study

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Abstract:-

Introduction: General practitioner dentists and non-orthodontic specialties should have the knowledge of the basic principles and practices of orthodontics in order to educate the patients, diagnose their problems correctly and for proper referral.

Many times, patient might present with a chief complaint that he/she would not be able to correlate with an underlying malocclusion. In that case, it is imperative for the dentist to identify and diagnose the chief cause which may be an orthodontic cause and then plan a proper referral

Aim:- The objective of the present study is to assess the Knowledge and Attitude about Principles and Practices of Orthodontic Treatment among Dentists and Non-Orthodontic Specialists in Karnataka.

Method:- This study was performed by presenting a closed questionnaire to a total of 359 participants who were general dental practitioners and non-orthodontic specialists. A self-developed questionnaire was distributed through personal contact and e-mail. The questionnaire survey included a total number of 17 questions out of which 12 questions were formulated to study the knowledge and 5 questions were formulated to study the attitude towards orthodontic treatment principles and practices.

Result:- Among 359 responders, 74% (n=267) knew that ideal period to start orthodontic treatment was by assessing the Growth period and treating accordingly, 88% (n=316) knew that malocclusions can be treated during mixed dentition stage, 94% (n=337) were aware of functional therapy, 75% (n=267) knew that functional appliances were best advised during peak of pubertal growth period, 94% (n=337) considered functional therapy as a part of orthodontic treatment when a patient complains of incompetent lips and proclined teeth, 87% (n=312) were not sure whether extraction of teeth during orthodontic treatment, 96% (n=346) believed habits like mouth breathing or thumb-sucking have an effect on the alignment of anterior teeth, 89% (n=321) believed correcting the malocclusion influences healthy social living, 94% (n=339) believed orthodontic therapy can be a part of management of

Temporomandibular disorders, 68% (n=246) thought that retainers should be worn for 12 months after orthodontic therapy, 58% (n=208) believed that orthodontic treatment can be given in periodontally compromised patients, 86% (n=309) believed orthodontic treatment can be delivered even if the molars were missing, 96% (n=343) considered calling an orthodontist for opinion, 87% (n=311) answered that they carry out diagnostic orthodontic procedures, 84% (n=300) believed orthodontic treatment can be started before the eruption of all permanent teeth, 88% (n=316) said that they will look for malocclusions even if the patient presented with some other chief complaint, 70% (n=250) considered doing orthognathic surgery at patient's convenience place.

Conclusion:- This study showed that there is good knowledge and Attitude about Principles and Practices of Orthodontic Treatment among Dentists and Non-Orthodontic Specialists in Karnataka. However, there is a need to increase the knowledge about few things like retention after orthodontic treatment and regarding the requirement of extraction for particular orthodontic treatment and hence there is a need for an increased clinically oriented education in the undergraduate courses and a multi-disciplinary inter department seminar presentations and forums set up for the post-graduation courses for them to understand the scope of each other's specialties.

Keywords:- assessment; attitude; knowledge; orthodontic treatment.

I. INTRODUCTION

Malocclusion has a variety of causes but the outcomes are quite common including unesthetic appearance, patient discomfort, gingival and periodontal problems, difficulty in chewing, speech problems, and etc.¹ So, a multidisciplinary approach of patient education is required for them to understand the need of orthodontic treatment. Thus, general practitioner dentists and non-orthodontic specialties ought to have the knowledge of the basic principles and practices of orthodontics in order to educate the patients.² Many times patient might present with a chief complaint that he/she would not be able to correlate with an underlying malocclusion. In that case, it is imperative for the dentist to

identify and diagnose the chief cause which may be an orthodontic cause and then plan a proper referral.³This study is done with an objective to assess the Knowledge and Attitude about Principles and Practices of Orthodontic Treatment among Dentists and Non-Orthodontic Specialists in Karnataka.

II. METHODS

A self-developed questionnaire was distributed to general dental practitioners and non-orthodontic specialists in the state of Karnataka through personal contact and e-mail. The Ethical approval was obtained from the Ethical committee KVG dental college Sullia, Dakshina Kannada. To maintain the utmost confidentiality, the personal details are not disclosed or circulated anywhere except for between the researchers and so the names of the participants are not disclosed in the final report. The inclusion criteria included general practitioner dentists who have completed their bachelor degree and the Dental specialists other than the orthodontists in the state of Karnataka. Exclusion criteria included dental practitioners who are not currently practicing anywhere.

A sample size of 359 was taken using the following formula

$$n = \frac{(Z_{1-\alpha/2})^2 SD^2}{d^2}$$

where, Sd= Standard Deviation= 1.87

$Z_{1-\alpha/2} = 1.96$ at 95% Confidence Interval

d = Absolute Error or Precision- 0.20,

Substituting the Values, We Get n = 335.75

To compensate for any possible errors', the sample size was increased to 359

The questionnaire survey included a total number of 17 questions out of which 12 questions were formulated to study the knowledge and 5 questions were formulated to study the attitude towards orthodontic treatment principles and practices.

Following were the components of the questionnaire

1. What is the ideal period to start orthodontic treatment?
 - a. Mixed dentition period
 - b. Permanent dentition period
 - c. After all the 3rd Molars are erupted
 - d. To assess the Growth period and treat accordingly
2. Can malocclusions be treated during mixed dentition stage?
 - a. Yes
 - b. No
3. Are you aware of functional therapy as a part of Orthodontic treatment?
 - a. Yes
 - b. No

4. Functional appliances are best advised in which growth stage?
 - a. Pre pubertal
 - b. Peak of pubertal growth
 - c. Post pubertal growth
 - d. Growth stage doesn't matter
5. Do you consider functional therapy as a part of orthodontic treatment when a patient complains of incompetent lips and proclined teeth?
 - a. Yes
 - b. No
6. Does orthodontic treatment require extraction?
 - a. Yes
 - b. No
 - c. May be, Sometimes
7. Do habits like mouth breathing or thumb-sucking have an effect on the alignment of anterior teeth?
 - a. Yes
 - b. No
8. Do you believe correcting the malocclusion influences healthy social living?
 - a. Yes
 - b. No
9. Can orthodontic therapy be a part of management of Temporomandibular disorders?
 - a. Yes
 - b. No
10. What is the time duration that retainers should be worn after orthodontic treatment?
 - a. 6 months
 - b. 12 months
 - c. 24 months
 - d. Life long
11. Is orthodontic treatment recommended for patients having periodontal problems?
 - a. Yes
 - b. No
 - c. May be
12. Do you deny orthodontic treatment for patients with missing molar?
 - a. Yes
 - b. No
13. Do you call specialist (orthodontist) for an opinion?
 - a. Yes
 - b. No
14. Do you carry out diagnostic orthodontic procedures?
 - a. Yes
 - b. No
15. Do you tell your patients to come for orthodontic treatment only after eruption of all permanent teeth?
 - a. Yes
 - b. No
16. Do you always look for malocclusions on clinical examination when patients report with any other complaint?
 - a. Yes
 - b. No

17. Where do you refer a patient for orthognathic surgery?

- a. Perform at own clinic
- b. Refer to dental college
- c. Refer to medical college
- d. Refer to multispeciality clinic
- e. According to patient’s convenience

III. RESULTS

The study included 359 participants and there were 17 questions the results of the study is as follows.

When asked about ideal period to start orthodontic treatment 267(74.4%) answered as by assessing the growth period and treat accordingly whereas 59 (16.4%) believed during mixed dentition stage, 25thought during permanent dentition stage and 8 participants thought after all 3rd molars are erupted.

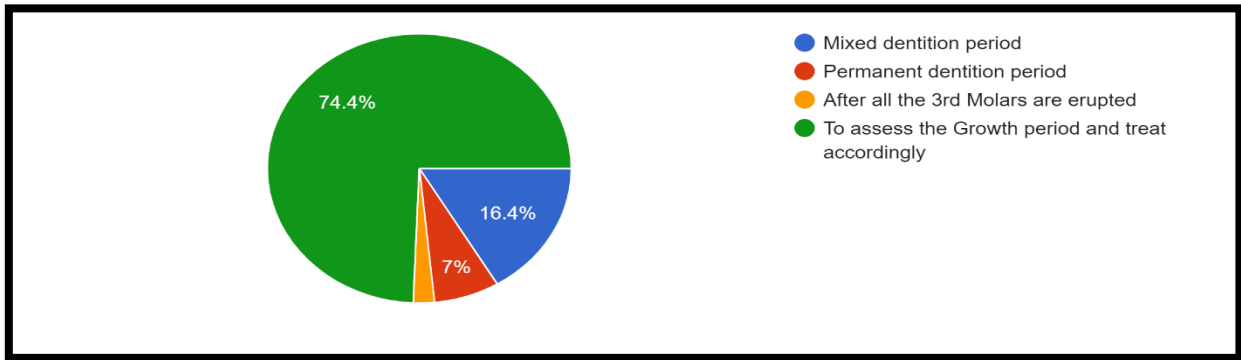


Fig. 1: Showing distribution of results for question 1

When asked about can we treat malocclusion during mixed dentition perio

316(88%) answered yes, we can and 43(12%) answered we cannot.

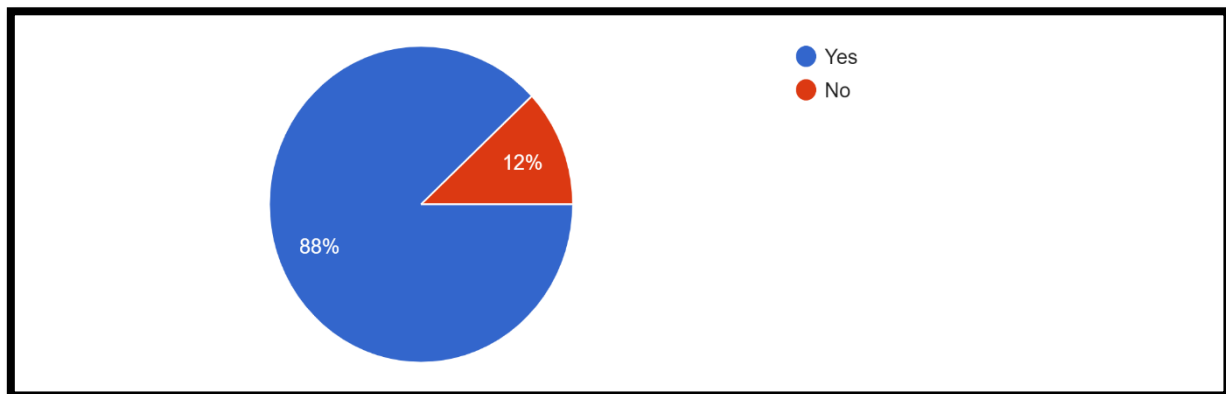


Fig. 2: Showing distribution of results for question 2

337(93.9%) were aware that functional therapy was part of orthodontic treatment 22(6.1%) were not aware of functional therapy.

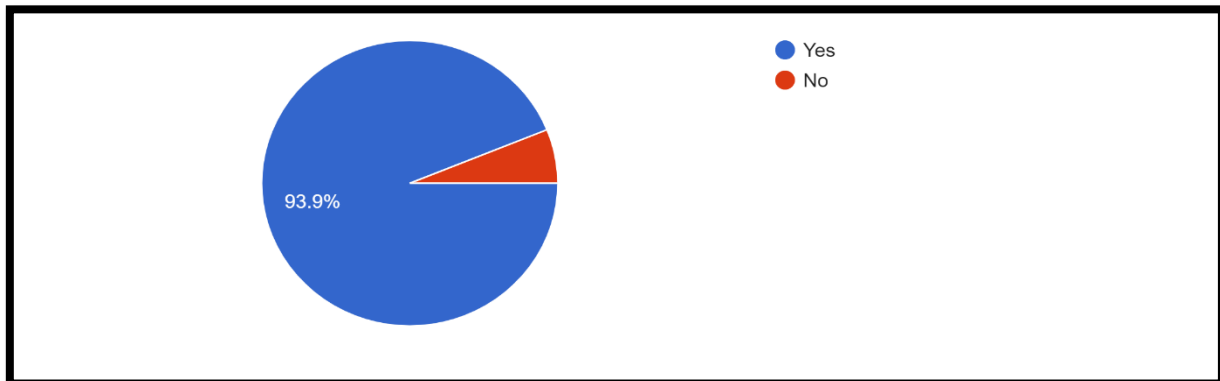


Fig. 3: Showing distribution of results for question 3

267 answered that functional appliances work best during peak of pubertal growth spurt whereas 71 believed during prepubertal period 15 believed during post pubertal period and 6 participants believed that growth doesn't matter.

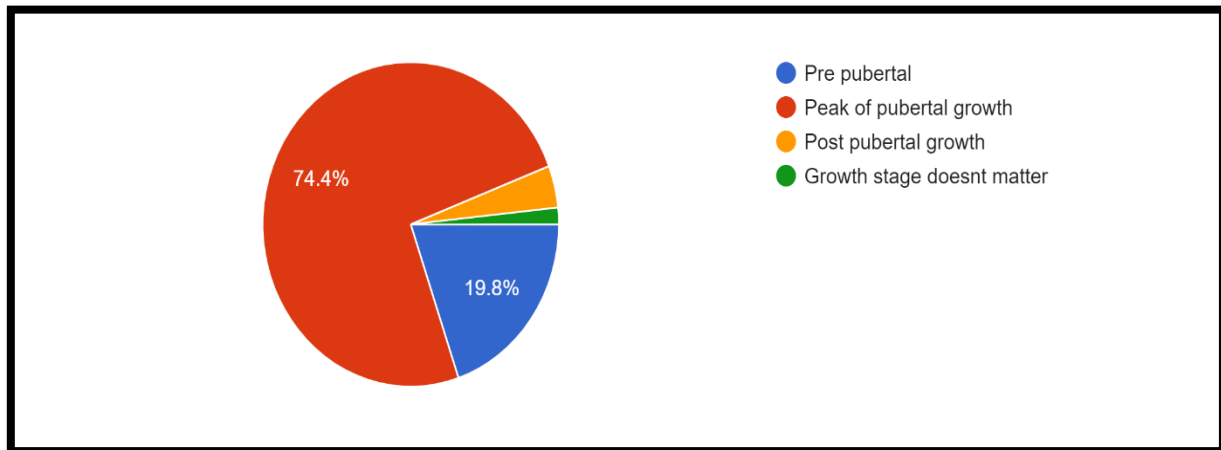


Fig. 4: Showing distribution of results for question 4

338(94.2%) answered that they consider functional therapy as a part of orthodontic treatment when a patient complains of incompetent lips and proclined teeth whereas 21 (5.8%) answered they won't consider.

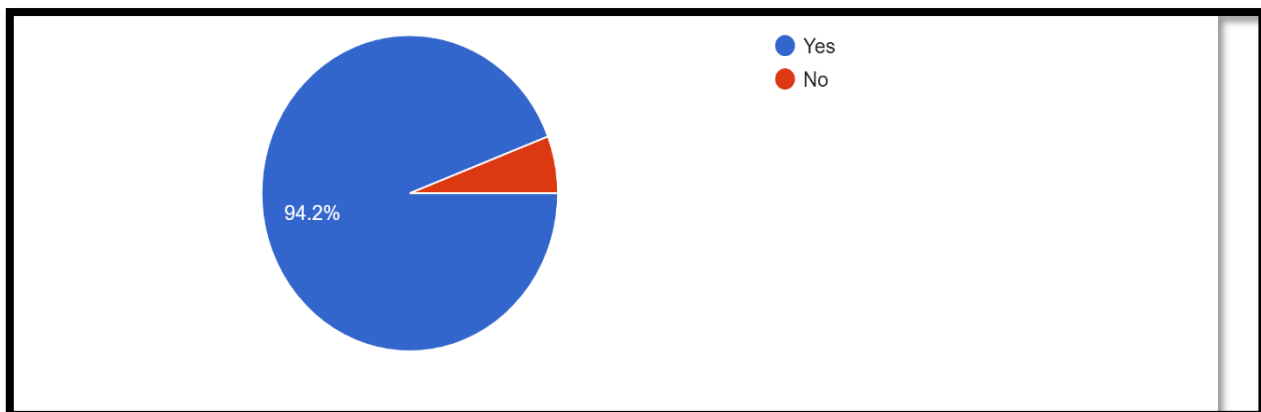


Fig. 5: Showing distribution of results for question 5

When asked about requirement of extraction during orthodontic treatment 312 (86.9%) answered sometimes its required sometimes its not required, 32(8.9%) believed extraction is required and 15(4.2%) participants believed extraction is not required.

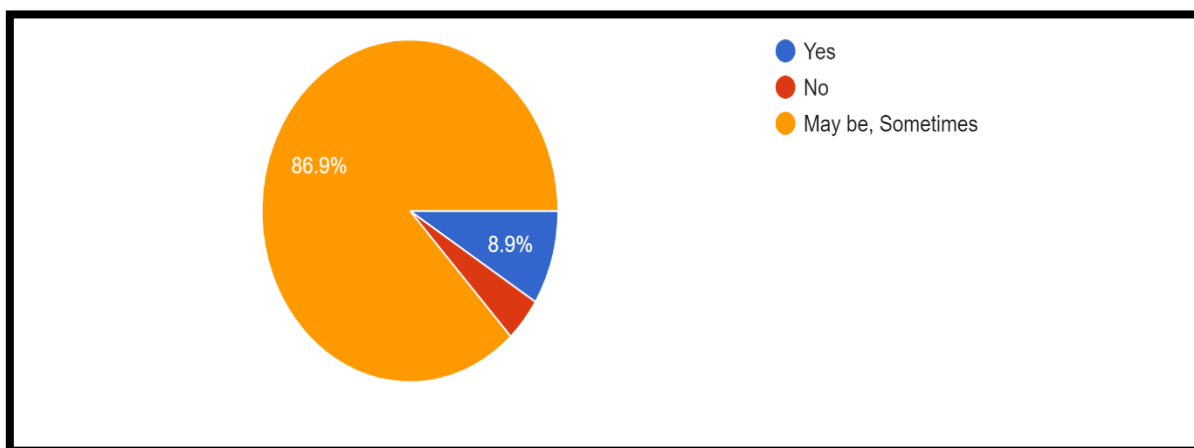


Fig. 6: Showing distribution of results for question 6

346(96.4%) answered mouth breathing or thumb-sucking have an effect on the alignment of anterior teeth whereas remaining 13 marked that it has no effect

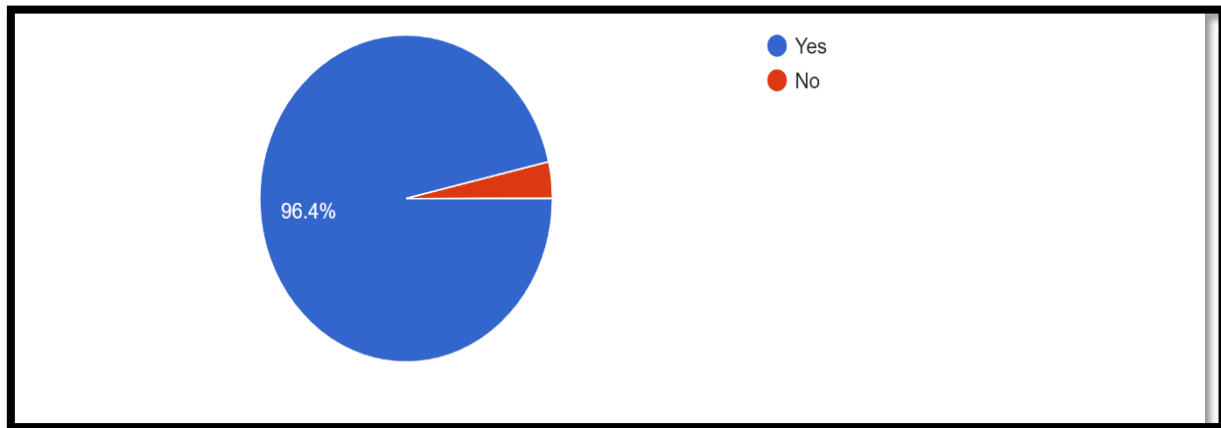


Fig. 7: Showing distribution of results for question 7

321 believed that correcting the malocclusion influences healthy social living,

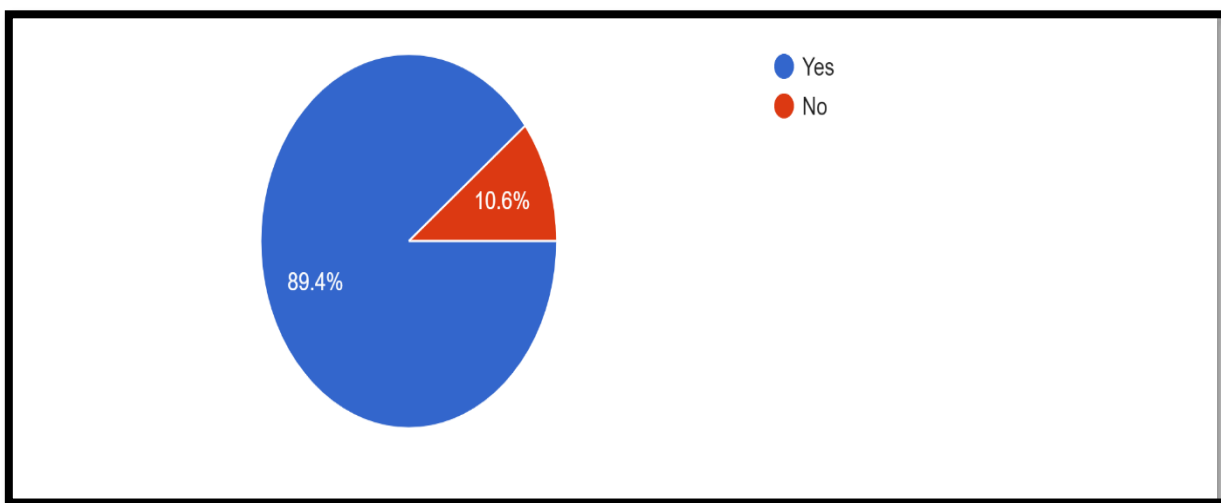


Fig. 8: Showing distribution of results for question 8

339 (94%) believed orthodontic therapy can be a part of management of Temporomandibular disorders

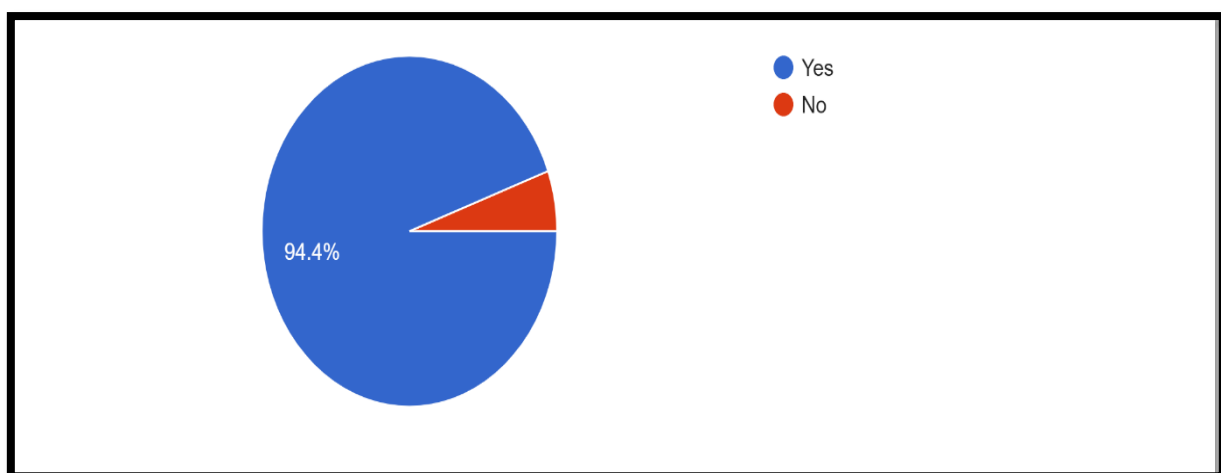


Fig. 9: Showing distribution of results for question 9

246 (68%) thought that retainers should be worn for 12 months after orthodontic therapy, 52(15%) believed that it should be worn for 6 months, 36(10%) believed it should be worn for 24 months only 25(7%) participants answered that it should be worn for life long.

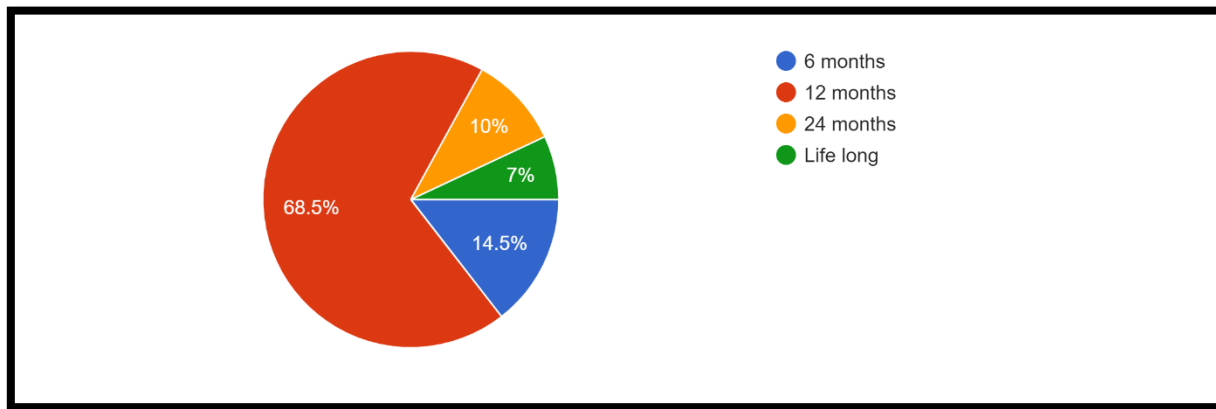


Fig. 10: Showing distribution of results for question 10

208 (58%)believed that orthodontic treatment can be given in periodontally compromised patients, 80 (22.3%) believed they cannot be treated whereas 71(20%) participants answered that they may be treated depending on the severity of periodontal problem they are having.

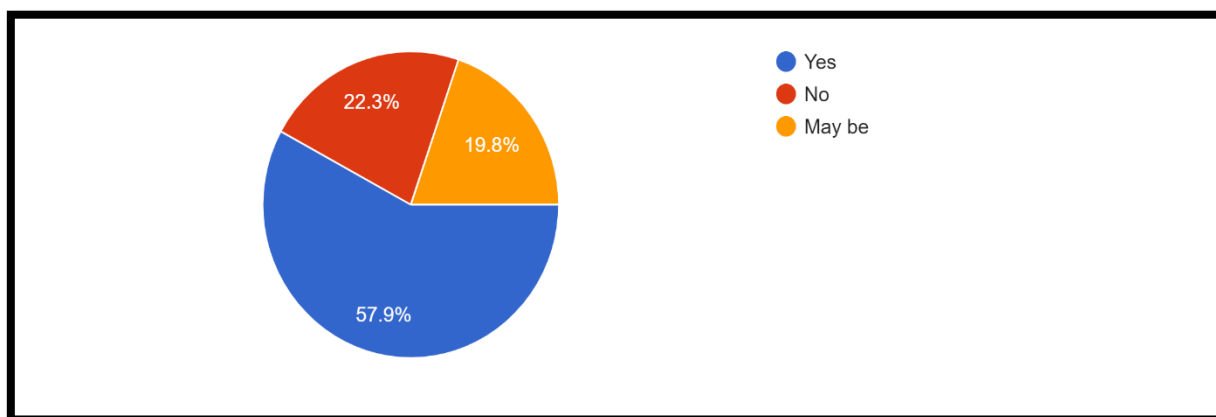


Fig. 11: Showing distribution of results for question 11

309 (86%) answered that orthodontic treatment can be delivered even if the molars were missing, but 50 (14%) believed that orthodontic treatment cannot be given if molars are missing.

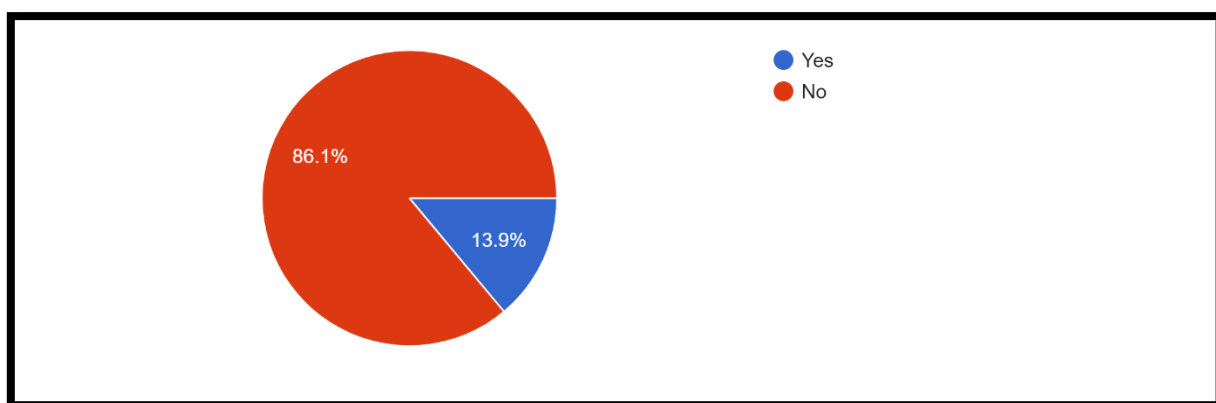


Fig. 12: Showing distribution of results for question 12

343 (96%)considered calling an orthodontist for opinion, whereas remaining 4% participants dint bother to call an orthodontist for opinion.

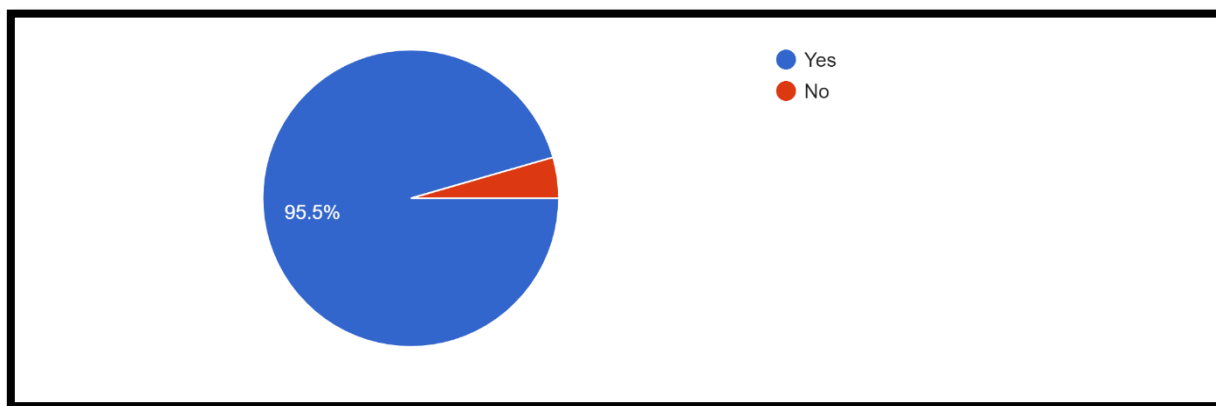


Fig. 13: Showing distribution of results for question 13

311 (87%) answered that they carry out diagnostic orthodontic procedures,

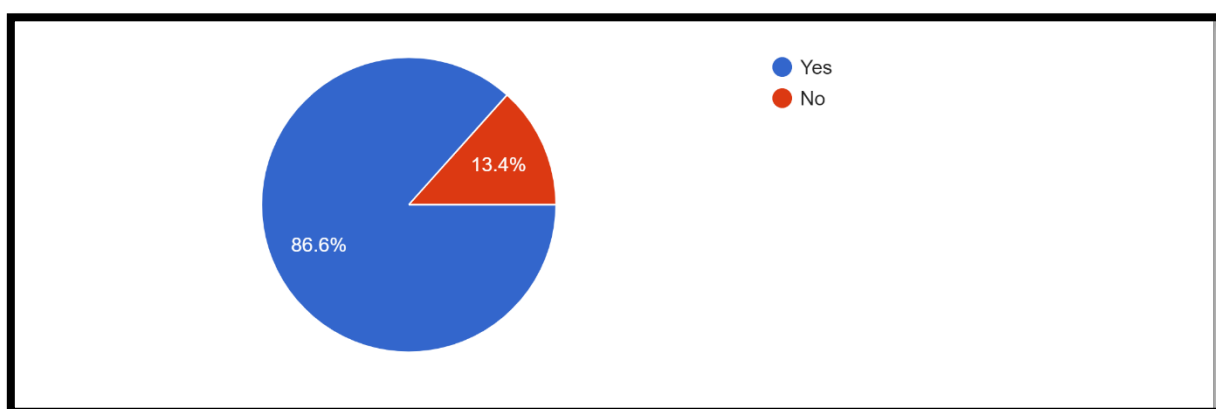


Fig. 14 : Showing distribution of results for question 14

300 (84%) believed that orthodontic treatment can be started before the eruption of all permanent teeth whereas remaining 59 (16%) believed that orthodontic treatment should be started only after all permanent teeth are erupted.

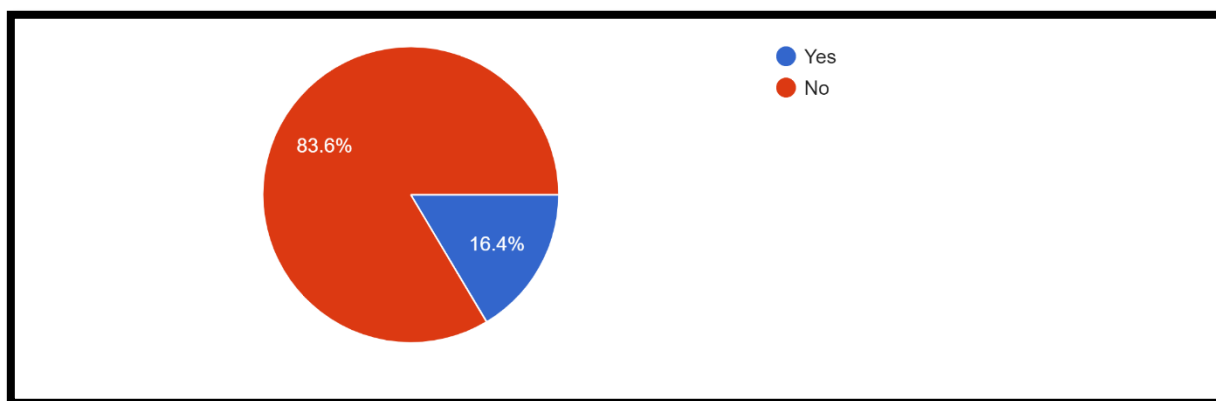


Fig. 15: Showing distribution of results for question 15

316 (88%) said that they will look for malocclusions even if the patient presented with some other chief complaint

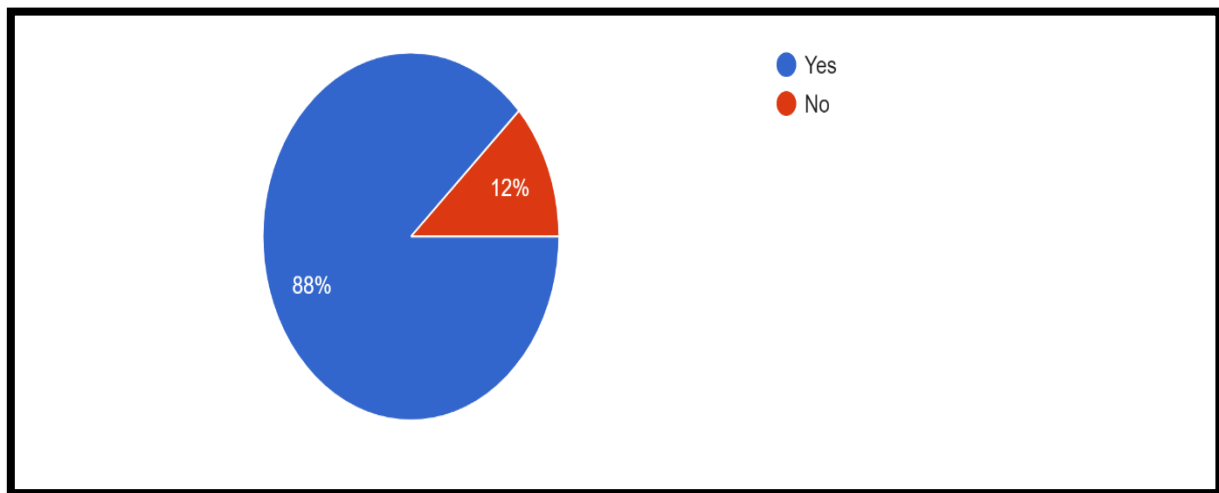


Fig. 16: Showing distribution of results for question 16

250 (70%) considered doing orthognathic surgery at patient’s convenience place, whereas 71 (20%) consider referring patient to a dental college, 17 (5%) referred to a multispeciality clinic, 13(3.6%) referred to medical college and 8 (2%) participants believed that they can do it at their own clinic.

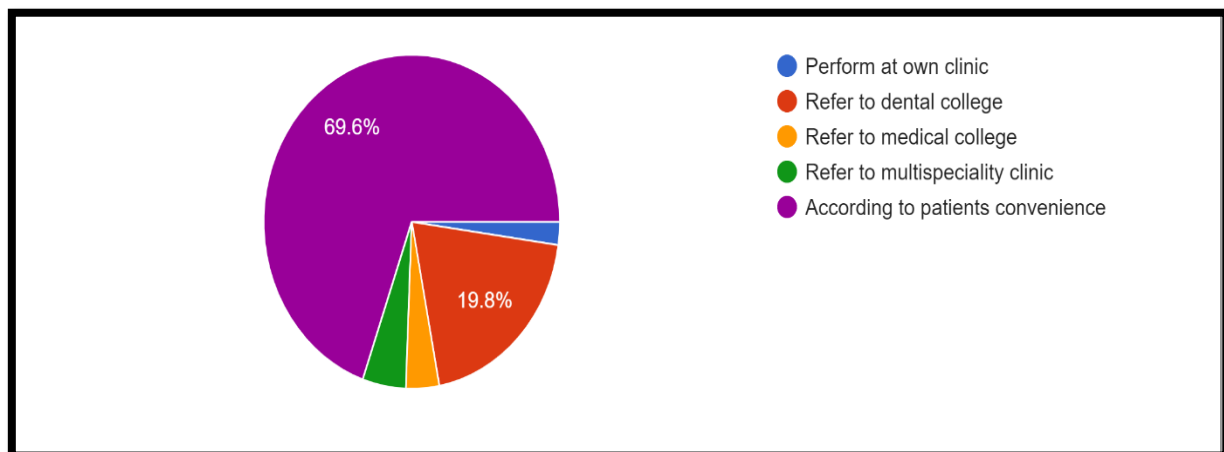


Fig. 17: Showing distribution of results for question 17

IV. DISCUSSION

Malocclusion is a common dental problem running at second number after the dental caries worldwide.⁴ Dental malocclusion can have a plethora of implications and the most common being on facial aesthetics. Many associated problems also include periodontal problems, difficulty in mastication, speech, swallowing, TMJ problems, associated habit development, etc.⁵ Many a times, patients come to the dentists with one of the associated problems as the chief complaint and at that time, it is imperative for the dentist to recognize the key cause and understand the need for orthodontic treatment.⁶The present study focuses on the knowledge of dental practitioners both general and non-orthodontic specialties towards the basic principles and practices of orthodontic treatment. Our study shows that there is better understanding about orthodontic basic principles and practices among the general dental practitioners and non -orthodontic specialists. But still there is a need to understand basic of orthodontics among many dentists who are lacking basic knowledge even to diagnose an orthodontic problem. In a study done by Alnusayri on

1716 participants in Saudi Arabia showed similar results of knowledge and attitude amongst the general practitioner dentists and specialists.⁷Many other studies have also been done on the knowledge of key parameters of malocclusion in many parts of the world.^{8,9} Many of these studies support the fact that dental graduates do not have an ample knowledge of basic malocclusion concept.¹⁰ A unique study was done in Ireland in which a survey was done among the dental practitioners about the undergraduate orthodontic training that they have had and the extent to which they apply it in their practice. The results showed a 54% of positive response about the academic knowledge. About 60% of them said they could handle orthodontic emergencies. And 70% aspired to go for higher education in this field.¹¹The present study is just the first step towards a bigger question. The end goal is to make sure the dental graduates have enough knowledge so that a proper referral of such cases can be made to an orthodontist in time. However, the limitation of this study is the geographic area covered and the sample as it was a convenient sample. More studies done in this niche would potentiate the findings and help in acquiring better evidence-based conclusion.

V. CONCLUSIONS

This study showed that there is good knowledge and Attitude about Principles and Practices of Orthodontic Treatment among Dentists and Non-Orthodontic Specialists in Karnataka. But still there is a need to understand basic of orthodontics among many dentists who are lacking basic knowledge even to diagnose an orthodontic problem. However, there is a need to increase the knowledge about few things like retention after orthodontic treatment and regarding the requirement of extraction for particular orthodontic treatment and hence there is a need for an increased clinically oriented education in the undergraduate courses and a multi-disciplinary inter department seminar presentations and forums set up for the post-graduation courses for them to understand the scope of each other's specialties.

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