ASSESSMENT OF KNOWLEDGE OF ANTERIOR DENTAL ESTHETICS AMONGST DENTAL PRACTITIONERS

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AQSA NADEEM
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CLINICAL IMPLICATIONS

The survey was conducted amongst general dentists and specialists in Lahore, categorized according to qualifications and experience, to emphasize the importance of improvement in undergraduate dental curriculum and encourage continuing dental education in all fields of dentistry. The topic of esthetics was selected as it correlates to all major fields of dentistry.

ABSTRACT

The objectives of this study were firstly to assess the effect of the current curriculum on knowledge of anterior dental esthetics in dental graduates. Secondly to compare the influence of clinical experience on existing knowledge of anterior dental esthetics. A cross sectional study was carried out amongst the house surgeons, general dentists and specialists (prosthodontics, maxillofacial surgery, operative dentistry, periodontics, orthodontics) of six dental colleges of Lahore district during June 2014 using convenient sampling. A data of total two hundred and eighty four (n=284) study subjects was collected. The demographic details were descriptive of practitioners' age, gender, category and year of graduation. The questionnaire composed of 30 survey questions to know their knowledge about gingival esthetics and dental esthetics. Data were analyzed on SPSS version 20.0. Chi square test was used to find any association amongst various variables. p value was considered statistically significant, if ≤ 0.05. The results showed only 141 (49.6%) out of 284 dentists had satisfactory knowledge about gingival esthetics. 261 (91.9%) out of 284 dentists had satisfactory knowledge about anterior dental esthetics. Satisfactory knowledge about gingival esthetics was higher in prosthodontics/restorative/perio specialty (76.1%) as compared to other categories, showing statistical significance (p <0.001). Dentists with >10 years' experience had satisfactory knowledge (73.1%) about gingival esthetics than those with >10 years' experience (p=0.008). Dentists with >10 years of experience had satisfactory knowledge of anterior dental esthetics, but continuing dental education can improve the professional excellence.

Key Words: esthetics, dental; continuing dental education; over bite; knowledge; gingiva.

INTRODUCTION

Increased awareness of general population about their appearances, claims more esthetic results from dentists. Dentistry is taught as a subject that revolves around the art and science of esthetics and function of the masticatory apparatus and its surrounding structures. Thus esthetic forms one of the basis of surgical, restorative and corrective procedures. Although dental schools are trying to cope with this changing paradigm, by incorporating esthetics within the dentistry syllabus, still many practicing dentists are depending upon the programs of continuing dental education to master the subject.

Anterior dental esthetics can be subdivided descriptively into facial, dental and gingival components. Facial esthetics comprises of integration of facial features and dental restorations, and their harmony with existing skeletal and soft tissue features to either enhance desirable qualities or distract attention from undesirable abnormalities. Gingival esthetics means the shape, texture and tooth to tooth transition and color of gingiva. It is dependent upon underlying factors like

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anatomy of dentogingival complex, periodontal biotype, distance of contact point with bone crestal level, tooth morphology and gingival bioform. Dental esthetics refers to shape, size, color, position of teeth and their inter and intra arch relationships. Although there is considerable overlapping of these components. Relation of extra oral structures with intra oral components and the relation of intra oral components with each other may affect the consequence of any dental service. So appropriate knowledge and its correct application is mandatory for any quality dental treatment.

The objectives of this study were firstly to assess the effect of the current curriculum on knowledge of anterior dental esthetics in dental graduates. Secondly to compare the influence of clinical experience on existing knowledge of anterior dental esthetics.

METHODOLOGY

Approval was taken from institutional review board committee prior to the initiation of the study. It was a cross sectional observational study. Sampling technique was convenient sampling. A questionnaire was hand distributed amongst the house surgeons, general dentists and specialists (prosthodontics, maxillofacial surgery. Operative dentistry, periodontics, orthodontics) of six dental colleges of Lahore district during June 2014. The forms were distributed amongst 320 subjects. The acceptance of form was considered as the consent to participate in the study. A data of total two hundred and eighty four (n=284) of subjects were collected from the target population. The demographic details were descriptive of practitioners’ age, gender, category (house surgeon, general practitioner, specialist) and year of graduation. The questionnaire was formulated on basic knowledge of anterior dental esthetics taught in undergraduate dental curriculum. It included questions about shape, shade, size of teeth, golden proportion, dentogenic concept (age, sex, personality), facial and esthetics midline, facial symmetry, incisors display, overjet, overbite, smile line, role of anterior guidance and effects on phonetics. The knowledge about gingival esthetics was assessed through questions about gingival esthetic line, periodontal biotype, biological width, effect of subgingival crown margins and distance of osseous crest with contact points of teeth 4. The maximum marks were 30. Those respondents who got 60% marks were considered to have satisfactory knowledge about anterior dental esthetics. The answers were assessed according to the key known to researchers only.

After collection the data was analyzed on SPSS version 20.0. Chi square test was utilized to assess the association amongst various variables. p value was considered statistically significant, if ≤ 0.05.

RESULTS

A data of total two hundred and eighty four (n=284) of study subjects was collected from the target population. The respondents scoring 60% marks were considered to have satisfactory knowledge about anterior dental esthetics. Table 1 shows that only 141 (49.6%) out of 284 dentists had satisfactory knowledge about gingival esthetics. However 261 (91.9%) had satisfactory knowledge about only dental esthetics.  

Table 2 shows comparison of knowledge of anterior dental esthetics and gingival esthetics amongst various specialties. p value was considered statistically significant, if ≤ 0.05. Satisfactory knowledge about only gingival aesthetics was higher in prosth/o/restorative/perio specialty as compared to others. Chi square test showed that there was statistically significant association between specialty and knowledge about gingival esthetics. However, there was no statistically significant difference in satisfactory knowledge of only anterior dental esthetics amongst various dental categories.

Table 3 shows the comparison of level of knowledge of gingival esthetics amongst practitioners with diverse clinical experience. Dentists with >10 years of clinical experience had satisfactory knowledge about gingival esthetics. Chi square test showed that there was statistically significant association between clinical experience and knowledge about gingival esthetics. However, there was no statistically significant difference in satisfactory knowledge of only anterior dental esthetics amongst various dental categories.

Table 4 shows the comparison of level of knowledge of anterior dental esthetics amongst practitioners with diverse clinical experience. It shows no significant difference when compared to dentists having less than and equal to or more than 5 years of experience.

**TABLE 1: PERCENTAGES OF SATISFACTORY AND UNSATISFACTORY KNOWLEDGE ABOUT GINGIVAL AND DENTAL ESTHETICS**

<table>
<thead>
<tr>
<th>Knowledge of Gingival esthetics</th>
<th>Knowledge of dental esthetics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Unsatisfactory knowledge &lt; 60%</td>
<td>143</td>
</tr>
<tr>
<td>Satisfactory knowledge 60% and above</td>
<td>141</td>
</tr>
<tr>
<td>Total</td>
<td>284</td>
</tr>
</tbody>
</table>
DISCUSSION

The study was conducted to assess the knowledge about anterior dental and gingival esthetics amongst general practitioners and specialist in Lahore district. Data showed that there is no significant difference of anterior dental esthetics knowledge amongst house surgeons, general dental practitioners and all specialists. This can be compared to a Spanish study in which the difference in esthetic perception amongst dental students of different years, did not improve significantly throughout their degree years.\(^6\)

There is a statistically significant difference of gingival esthetic knowledge amongst house surgeons, general dental practitioners and specialist. Even amongst specialists, Prosth/Restorative/Periodontist scored better percentage than orthodontist and oral and maxillofacial surgeons. This might show a deeper gingival esthetic consideration and knowledge application during restorative treatment planning. This result is in accordance to other study\(^6\), of esthetic perception amongst laymen, general dentists and orthodontist. Their study\(^6\) showed higher anterior dental and gingival esthetic perception percentages of orthodontists. They used a pictorial representation of an esthetic outcome instead of a questionnaire as an assessment tool. This result may reflect the influence of focused education on improvement of clinical assessment and knowledge application. Thus dental education seems to have a distinct influence on the perception of facial esthetics than a layman.\(^7,8\)

Inclusion of esthetics as a special part of curriculum

<table>
<thead>
<tr>
<th>Dentist's categories</th>
<th>Dental esthetics knowledge</th>
<th>P value</th>
<th>Gingival esthetics knowledge</th>
<th>P value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;60%</td>
<td>≥60%</td>
<td></td>
<td>&lt;60%</td>
<td>≥60%</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>House surgeons</td>
<td>14</td>
<td>8.1%</td>
<td>158</td>
<td>91%</td>
<td>94</td>
</tr>
<tr>
<td>OMFS</td>
<td>1</td>
<td>8.3%</td>
<td>11</td>
<td>91%</td>
<td>4</td>
</tr>
<tr>
<td>Prosth/Rest</td>
<td>1</td>
<td>2.2%</td>
<td>45</td>
<td>97%</td>
<td>11</td>
</tr>
<tr>
<td>Orthodontist</td>
<td>1</td>
<td>8.3%</td>
<td>11</td>
<td>91.7%</td>
<td>4</td>
</tr>
<tr>
<td>General dental practitioner</td>
<td>6</td>
<td>14.3%</td>
<td>36</td>
<td>85.7%</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>8.1%</td>
<td>261</td>
<td>91.9%</td>
<td>143</td>
</tr>
</tbody>
</table>

OMFS= oral and maxillofacial surgeons  Prosth/ rest = Prosthodontist/Restorative dentist

| TABLE 3: COMPARISON OF EXPERIENCE OF DENTISTS AND KNOWLEDGE ABOUT GINGIVAL ESTHETICS |
|-----------------------------------------|---------------|--------------|
|                                       | <60%          | ≥60%         | Total         | P-value |
|                                       | n  | %   | n  | %   | n  | %   |
| ≤ 1 year                              | 62 | 60.8% | 40 | 39.2% | 102 | 100% |
| 1-5 years                             | 50 | 44.6% | 62 | 55.4% | 112 | 100% |
| 5-10 years                            | 24 | 54.5% | 20 | 45.5% | 44 | 100% |
| >10 years                             | 7  | 26.9% | 19 | 73.1% | 26 | 100% |
| Total                                 | 143 | 50.4% | 141 | 49.6% | 284 | 100% |

| TABLE 4: COMPARISON OF EXPERIENCE OF DENTISTS AND KNOWLEDGE ABOUT ANTERIOR DENTAL ESTHETICS |
|-----------------------------------------|---------------|--------------|
|                                       | <60%          | ≥60%         | Total         | P-value |
|                                       | n  | %   | n  | %   | n  | %   |
| ≤ 5 years                             | 188.4% | 19691.6% | 214 | 100% |
| >5 years                              | 57.1% | 6592.9% | 70 | 100% |
| Total                                 | 238.1% | 261.91.9% | 284 | 100% |

| DISCUSSION |

The study was conducted to assess the knowledge about anterior dental and gingival esthetics amongst general practitioners and specialist in Lahore district. Data showed that there is no significant difference of anterior dental esthetics knowledge amongst house surgeons, general dental practitioners and all specialists. This can be compared to a Spanish study in which the difference in esthetic perception amongst dental students of different years, did not improve significantly throughout their degree years.\(^6\)

There is a statistically significant difference of gingival esthetic knowledge amongst house surgeons, general dental practitioners and specialist. Even amongst specialists, Prosth/Restorative/Periodontist scored better percentage than orthodontist and oral and maxillofacial surgeons. This might show a deeper gingival esthetic consideration and knowledge application during restorative treatment planning. This result is in accordance to other study\(^6\), of esthetic perception amongst laymen, general dentists and orthodontist. Their study\(^6\) showed higher anterior dental and gingival esthetic perception percentages of orthodontists. They used a pictorial representation of an esthetic outcome instead of a questionnaire as an assessment tool. This result may reflect the influence of focused education on improvement of clinical assessment and knowledge application. Thus dental education seems to have a distinct influence on the perception of facial esthetics than a layman.\(^7,8\)

Inclusion of esthetics as a special part of curriculum
and its continuous reinforcement through continuing
dental education may result in esthetically pleasing
outcome of any dental treatment.

Present study showed the difference in experi-
ence did not markedly influence the knowledge about
anterior dental esthetics, however the knowledge
about the gingival esthetics showed statistically
significant difference amongst practitioners having
more than 10 years of clinical experience. It was
interpreted that previous experience of a clinician
confronting any clinical problem along with his
knowledge, beliefs and values guide his interpretive
activity, which identifies and prioritize the problem.
This is in accordance with another study done to
evaluate difference in clinical reasoning amongst
the experienced and inexperienced clinicians. In
that study students of different levels were asked
to formulate treatment plans for few vignettes
and then compared. This proved that diagnostic
interpretation of any clinical data involves a more
complex thought process affected by knowledge and
experience. Experienced clinician tend to foresee
the complicated problems and diagnose them at an
earlier stage. However, inexperienced individuals
fail to integrate the complete clinical findings and
organize them into a coherent treatment plan.

The questionnaire used in the present study com-
posed of closed ended questions, however the clinicians’
cognitive skills were effected by reproducing the same
knowledge through its constant practical application.
Ericsson has suggested the name of concept of “de-
liberate practices”, for improved clinical reasoning.
This concept stresses upon continuous exposure to
problems and repetition, reflection, and feedback over
those clinical situation for better interpretation.

CONCLUSION

With in limitations of this study, it can be conclud-
ed that undergraduate curriculum must be designed
and taught with close considerations of the need and
demands of the society. Experience with knowledge
may aid in deeper interpretation of the forthcoming
problems and better judgement skills.

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CONTRIBUTIONS BY AUTHORS

1 Hina Zafar Raja: Contribution to the writing, conception and design, acquisition, interpretation
of the data, drafting of the article and data analysis.
2 Aqsa Nadeem: Collection and analysis of the data.
3 Hina Naeem Awan: Collection and analysis of the data.